TomTom European Congestion Index



Disclaimer

TomTom Congestion Index

It is our mission to get drivers to their destinations faster, safer and greener.

Over the years we have invested in new ideas and technologies with the aim of bringing significant benefits to drivers, businesses and society as a whole.

In 2007 we started a groundbreaking initiative that helped us to understand how we could guide drivers in a better way. We set out to build a more precise view of traffic flow over the entire road network to enable us to give drivers more exact route information and arrival times.

With the support of millions of TomTom customers we have captured anonymous travel time information in all the territories where we are active. Rather than relying on theoretical models, we are now able to understand real-life driving patterns by time of day, day of week, time of year and around special events. This initiative is unique in that we are able to capture, evaluate and redistribute vehicle-centric travel information on a global scale.

Over the years we have built the world's largest database of historic travel times and the most detailed and accurate real-time traffic information available. Based on the insights we gained we have developed advanced routing technologies that help millions of drivers get to their destinations faster, safer and with lower emissions of greenhouse gases.

Contrary to popular belief, there are often multiple ways to reach a destination and avoid traffic congestion. Finding the fastest route is a complex task. Now, thanks to advanced routing technologies, motorists can drive with dynamic navigation systems which quickly react and adjust routes to the ever changing traffic situations.

By helping drivers to find a faster route we can also demonstrate that the total available capacity on the road network increases. If a small percentage of drivers uses different (and faster) routes, congestion can be alleviated across the entire road network, thereby benefitting all drivers.

By offering a more accurate analysis of traffic flows, we help identify and pinpoint congestion trouble spots more effectively. And by routing traffic away from congested areas we can play a key role in easing congestion in cities and urban areas.

Our historical archive of real travel times has paved the way for the creation of the TomTom Congestion Index – the most accurate and comprehensive barometer of traffic congestion in major cities all over the world.

About the TomTom Congestion Index

With the publication of the TomTom Congestion Index we are aiming to provide the general public, industry and policy makers with unique and unbiased information about congestion levels in urban areas*.

The methodology that is used in this report compares travel times* during non-congested periods (free flow*) with travel times* in peak hours*. The difference is expressed as a percentage increase in travel time*. We take into account local roads, arterials and highways. All data is based on actual GPS based measurements and for each city* the sample size is expressed in total number of measured kilometres for the period.

A comparison is made for the travel times* during the quarter and this is compared with the same period a year ago.

As well as assigning and ranking the overall congestion levels of over 50 cities*, the report evaluates the congestion levels* in cities at different times of the day and on different days of the week.

Individual city reports include more detailed information such as the most congested day*, average free flow speed*, time delay per year for commuters* and congestion levels on highways* and local roads.

To download a copy of the report go to: www.tomtom.com/congestionindex.

If you would like to know more about TomTom's trafflc solutions, please contact your local TomTom office or sales@tomtom.com.

For questions or comments about this report, please contact us at congestionindex@tomtom.com.

Note: words with a * are explained in the glossary at the end of the report.

Europe

Europe congestion level

24%



Top 5 - Increasing congestion

City	Previous Congestion	Increase in congestion	Current
Bradford-Leeds	23%	5	28%
Munich	21%	2	23%
Berlin	25%	1	26%
Marseille	41%	1	42%
Vienna	24%	1	25%

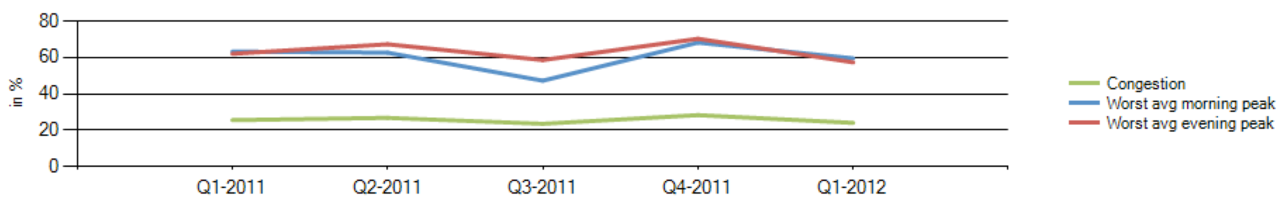
Top 5 - Decreasing congestion

City	Previous Congestion	Decrease in congestion	Current
Lisbon	29%	9	20%
Bern	14%	6	8%
Amsterdam	19%	5	14%
Milan	31%	5	26%
Rome	39%	4	35%

Top 10 cities

Rank	Prev. Year		City	Country	Congestion	Morning peak	Evening peak	Highways	Non-Highways
1	1	---	Warsaw	Poland	42%	89%	86%	39%	45%
2	2	---	Marseille	France	41%	79%	81%	23%	52%
3	3	---	Rome	Italy	34%	76%	66%	24%	40%
4	4	---	Brussels	Belgium	34%	82%	86%	27%	40%
5	6	▲	Paris	France	32%	72%	63%	29%	36%
6	5	▼	Dublin	Ireland	30%	70%	62%	23%	42%
7	19	▲	Bradford-Leeds	United Kingdom	28%	63%	60%	23%	34%
8	9	▲	London	United Kingdom	27%	48%	50%	10%	38%
9	8	▼	Stockholm	Sweden	27%	65%	62%	22%	32%
10	11	▲	Hamburg	Germany	27%	49%	42%	17%	35%

Comparison per quarter



Europe

Rank	Prev. Year		City	Country	Congestion	Morning peak	Evening peak	Highways	Non-Highways
1	1	---	Warsaw	Poland	42%	89%	86%	39%	45%
2	2	---	Marseille	France	41%	79%	81%	23%	52%
3	3	---	Rome	Italy	34%	76%	66%	24%	40%
4	4	---	Brussels	Belgium	34%	82%	86%	27%	40%
5	6	▲	Paris	France	32%	72%	63%	29%	36%
6	5	▼	Dublin	Ireland	30%	70%	62%	23%	42%
7	19	▲	Bradford-Leeds	United Kingdom	28%	63%	60%	23%	34%
8	9	▲	London	United Kingdom	27%	48%	50%	10%	38%
9	8	▼	Stockholm	Sweden	27%	65%	62%	22%	32%
10	11	▲	Hamburg	Germany	27%	49%	42%	17%	35%
11	12	▲	Cologne	Germany	26%	54%	47%	24%	32%
12	7	▼	Milan	Italy	26%	71%	53%	18%	32%
13	15	▲	Berlin	Germany	26%	42%	44%	22%	29%
14	17	▲	Vienna	Austria	24%	42%	43%	16%	31%
15	14	▼	Oslo	Norway	24%	66%	70%	20%	31%
16	13	▼	Naples	Italy	24%	34%	43%	10%	37%
17	18	▲	Turin	Italy	23%	50%	42%	11%	29%
18	22	▲	Munich	Germany	23%	50%	36%	17%	33%
19	23	▲	Birmingham	United Kingdom	21%	51%	43%	14%	32%
20	24	▲	Luxembourg	Luxembourg	21%	51%	47%	12%	34%
21	16	▼	Barcelona	Spain	21%	49%	39%	14%	24%
22	10	▼	Lisbon	Portugal	20%	41%	49%	9%	21%
23	21	▼	Helsinki	Finland	20%	43%	43%	15%	26%
24	20	▼	Prague	Czech Republic	20%	46%	31%	13%	27%
25	26	▲	Ruhr region west	Germany	17%	38%	28%	13%	28%
26	29	▲	Copenhagen	Denmark	16%	42%	29%	5%	26%
27	27	---	Madrid	Spain	16%	41%	33%	9%	23%
28	30	▲	Ruhr region east	Germany	15%	31%	28%	11%	24%
29	25	▼	Amsterdam	Netherlands	15%	33%	31%	8%	28%
30	28	▼	Valencia	Spain	14%	21%	21%	7%	23%
31	31	---	Bern	Switzerland	8%	19%	31%	0%	30%

Amsterdam



Congestion level

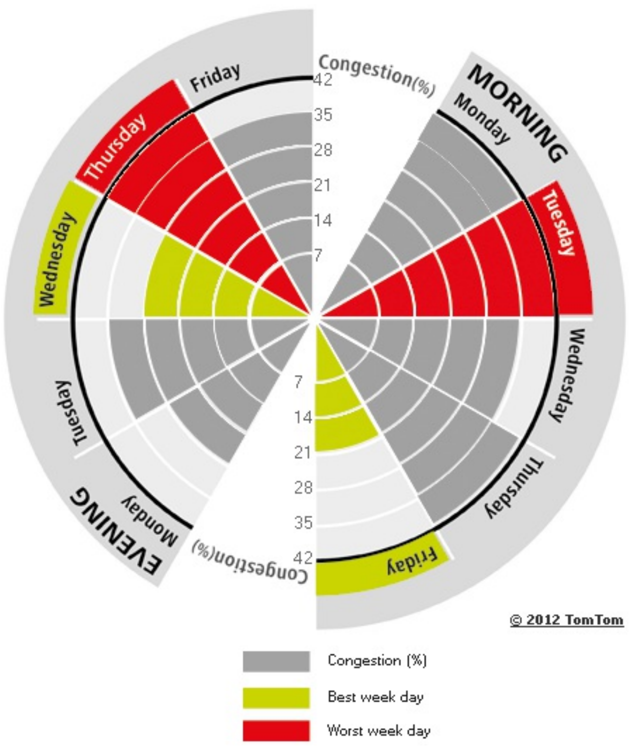
15%

Ranking

Ranking of city compared to continent	29/31
Previous ranking	25
Congestion level on highways	8%
Congestion level on non-highways	28%
Delay per hour driven in peak period	19 min
Delay per year with a 30 min commute	55 h

The weekly congestion pattern:

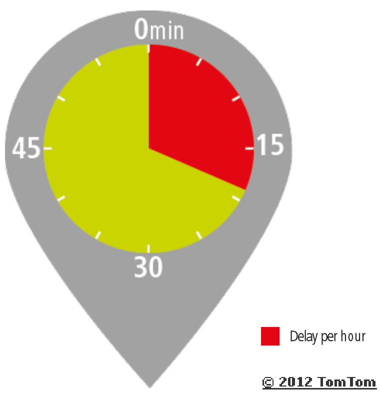
Best and worst peak periods of the week



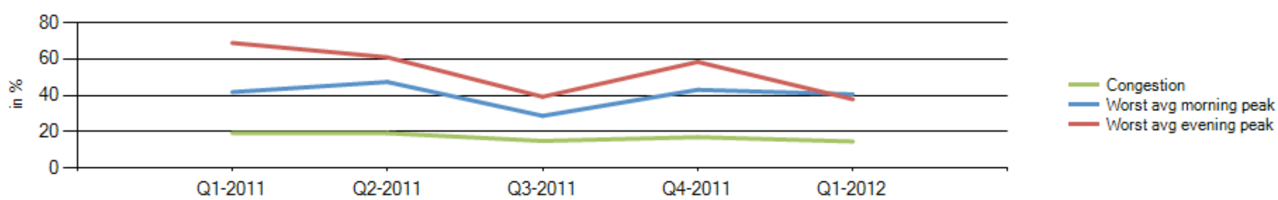
Most congested specific day	Fri 3 Feb 2012
Average free flow speed	57 km/h
Average speed during worst peak period	52 km/h
Total network length	925 km
Total network length highways	199 km
Total network length non-highways	726 km
Total vehicle kilometres	11 118 884 km

Congestion comparison

Delay per hour
driven in peak period



Comparison per quarter



Barcelona

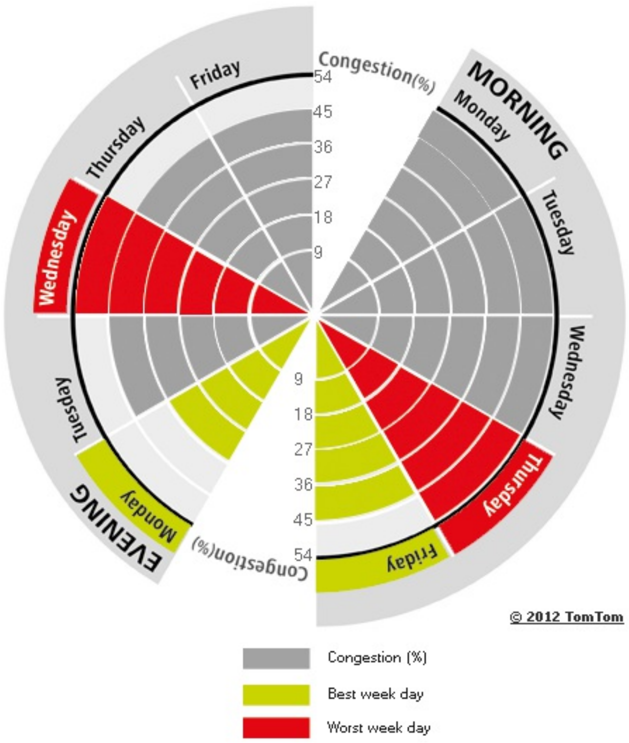


Congestion level

21%

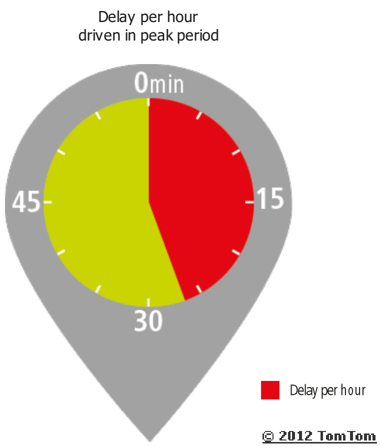
Ranking	
Ranking of city compared to continent	21/31
Previous ranking	16
Congestion level on highways	14%
Congestion level on non-highways	24%
Delay per hour driven in peak period	26 min
Delay per year with a 30 min commute	69 h

The weekly congestion pattern:
Best and worst peak periods of the week

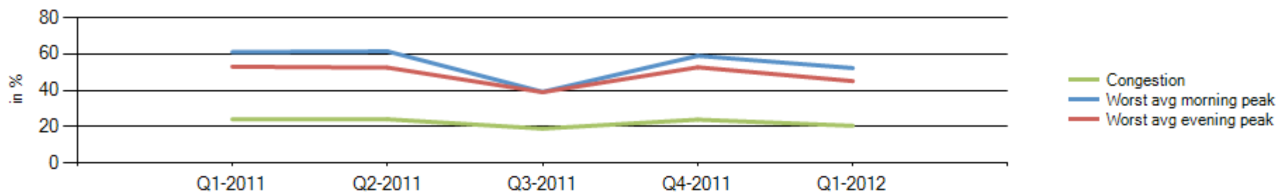


Most congested specific day	Fri 30 Mar 2012
Average free flow speed	56 km/h
Average speed during worst peak period	50 km/h
Total network length	629 km
Total network length highways	169 km
Total network length non-highways	460 km
Total vehicle kilometres	4 420 417 km

Congestion comparison



Comparison per quarter



Bern



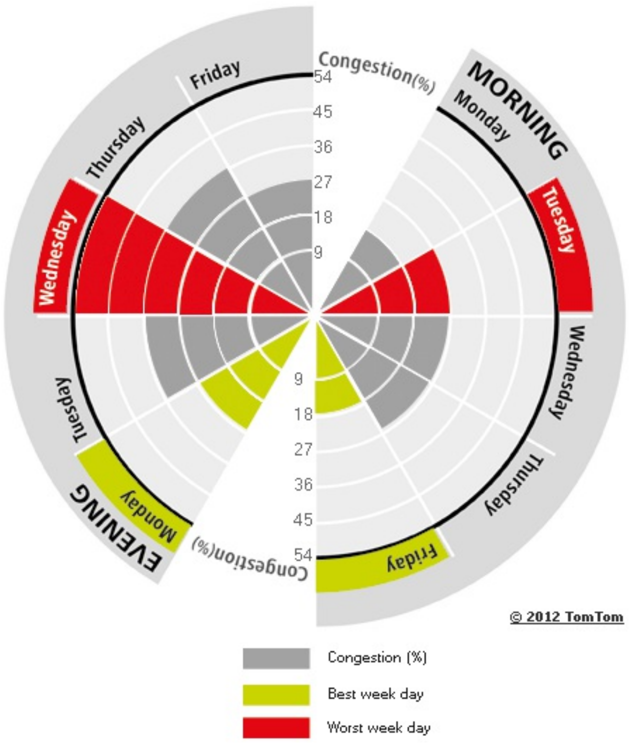
Congestion level

8%

Ranking	
Ranking of city compared to continent	31/31
Previous ranking	31 ---
Congestion level on highways	0%
Congestion level on non-highways	30%
Delay per hour driven in peak period	15 min
Delay per year with a 30 min commute	46 h

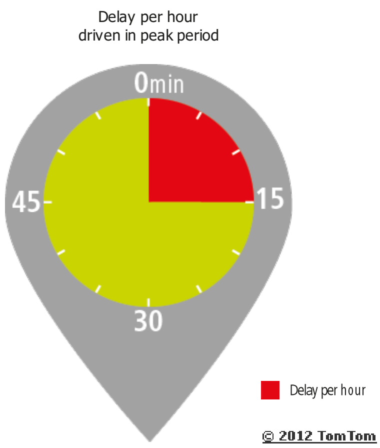
The weekly congestion pattern:

Best and worst peak periods of the week

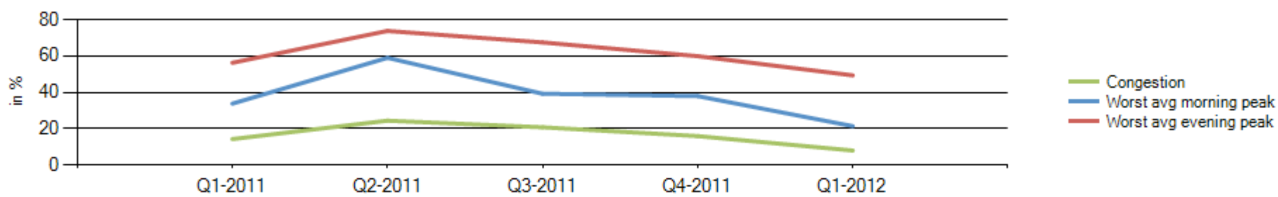


Most congested specific day	Wed 14 Mar 2012
Average free flow speed	49 km/h
Average speed during worst peak period	44 km/h
Total network length	202 km
Total network length highways	34 km
Total network length non-highways	168 km
Total vehicle kilometres	545 223 km

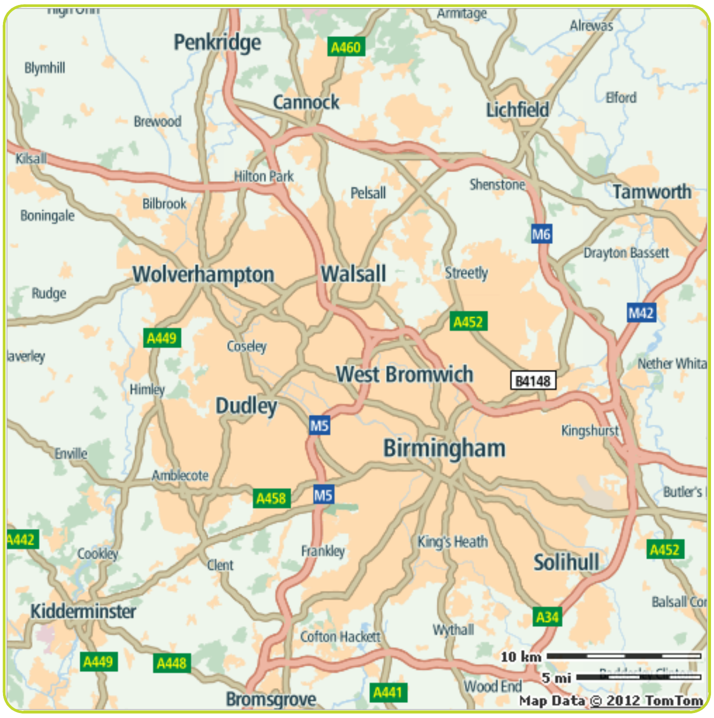
Congestion comparison



Comparison per quarter



Birmingham



Congestion level

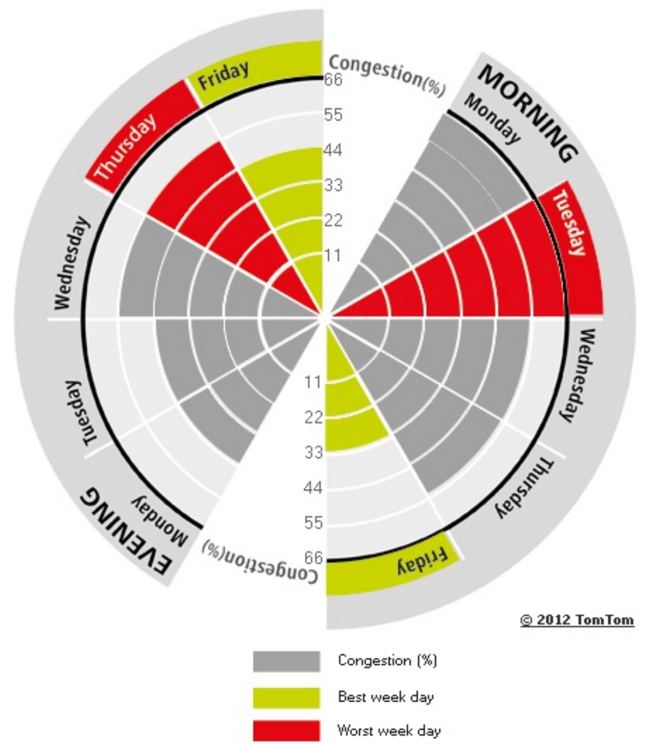
21%

Ranking

Ranking of city compared to continent	19/31
Previous ranking	23 ▲
Congestion level on highways	14%
Congestion level on non-highways	32%
Delay per hour driven in peak period	28 min
Delay per year with a 30 min commute	73 h

The weekly congestion pattern:

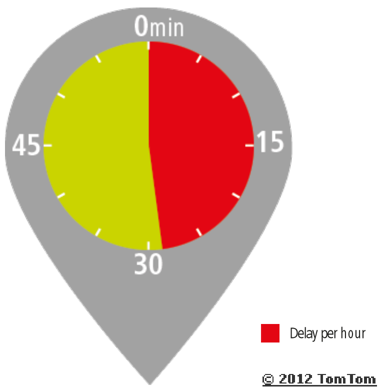
Best and worst peak periods of the week



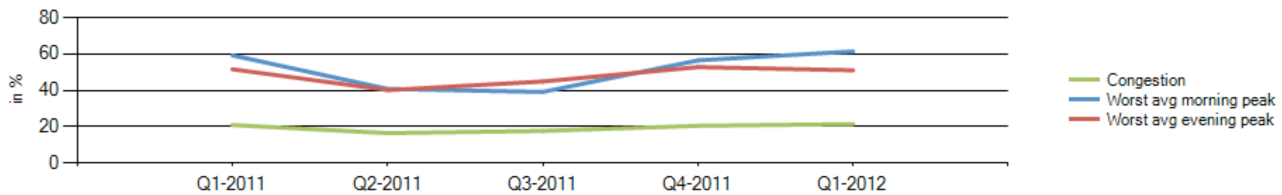
Most congested specific day	Thu 19 Jan 2012
Average free flow speed	61 km/h
Average speed during worst peak period	52 km/h
Total network length	2 647 km
Total network length highways	398 km
Total network length non-highways	2 249 km
Total vehicle kilometres	18 933 521 km

Congestion comparison

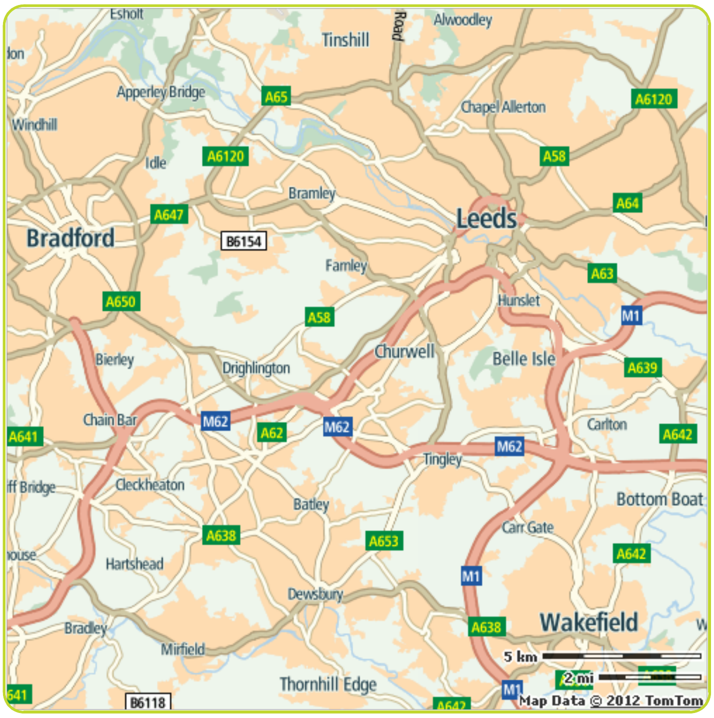
Delay per hour
driven in peak period



Comparison per quarter



Bradford-Leeds



Congestion level

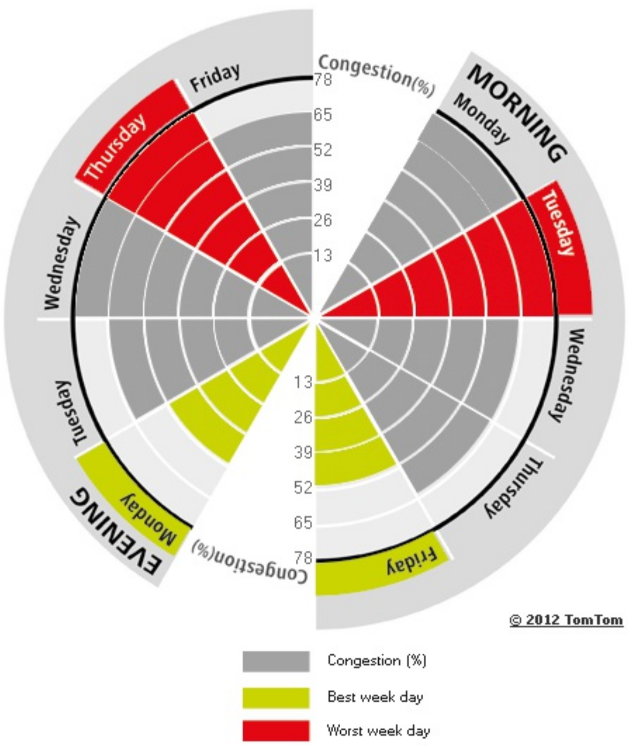
28%

Ranking

Ranking of city compared to continent	7/31
Previous ranking	19 ▲
Congestion level on highways	23%
Congestion level on non-highways	34%
Delay per hour driven in peak period	36 min
Delay per year with a 30 min commute	86 h

The weekly congestion pattern:

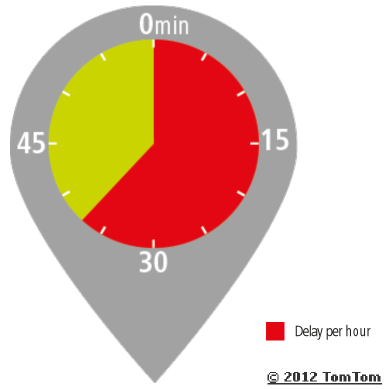
Best and worst peak periods of the week



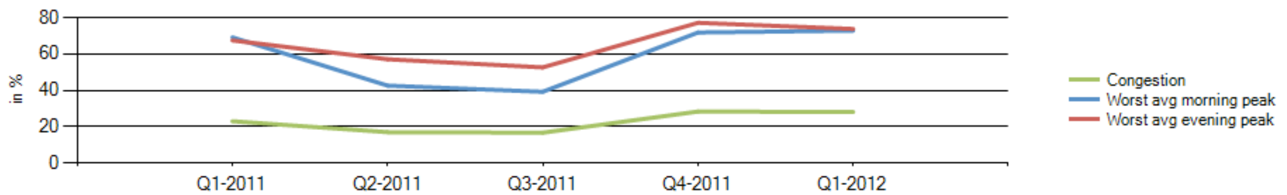
Most congested specific day	Fri 27 Jan 2012
Average free flow speed	58 km/h
Average speed during worst peak period	49 km/h
Total network length	1 223 km
Total network length highways	158 km
Total network length non-highways	1 065 km
Total vehicle kilometres	6 665 921 km

Congestion comparison

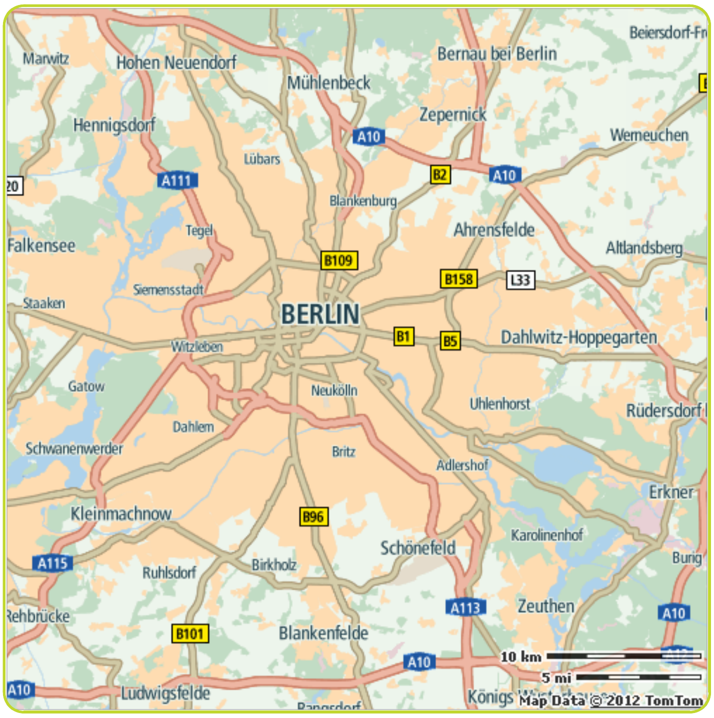
Delay per hour
driven in peak period



Comparison per quarter



Berlin



Congestion level

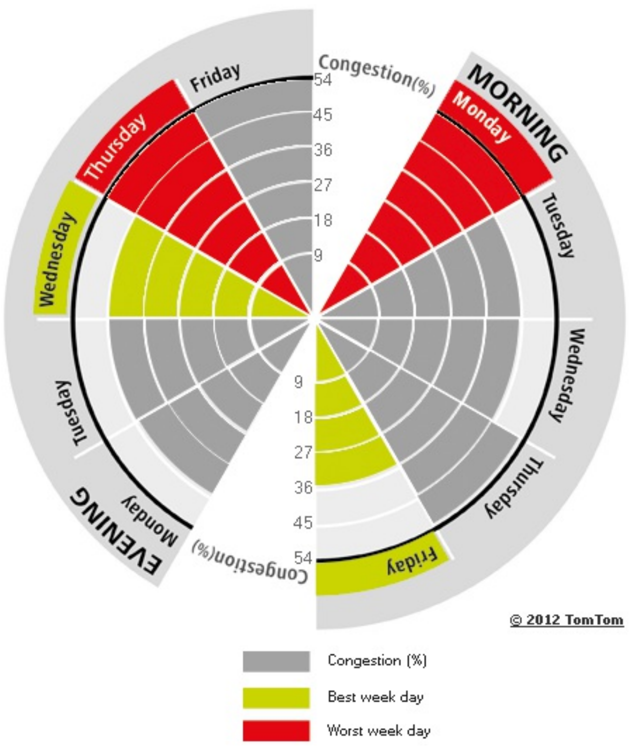
26%

Ranking

Ranking of city compared to continent	13/31
Previous ranking	15 ▲
Congestion level on highways	22%
Congestion level on non-highways	29%
Delay per hour driven in peak period	26 min
Delay per year with a 30 min commute	69 h

The weekly congestion pattern:

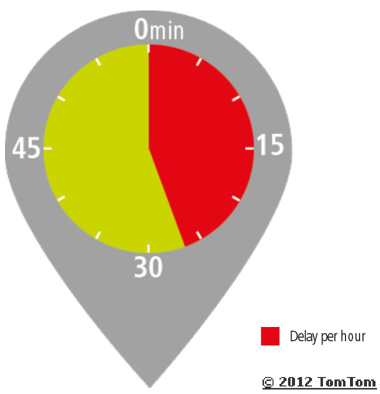
Best and worst peak periods of the week



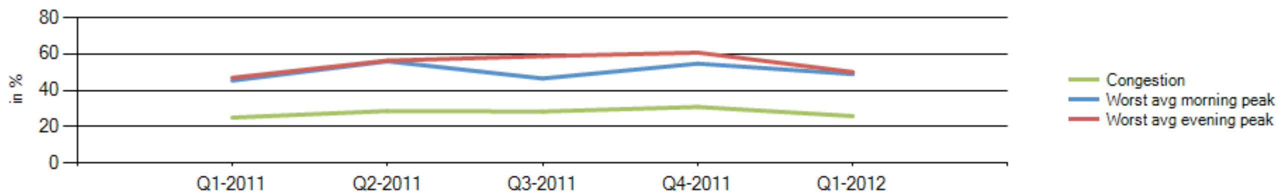
Most congested specific day	Thu 9 Feb 2012
Average free flow speed	53 km/h
Average speed during worst peak period	47 km/h
Total network length	2 866 km
Total network length highways	675 km
Total network length non-highways	2 192 km
Total vehicle kilometres	7 738 423 km

Congestion comparison

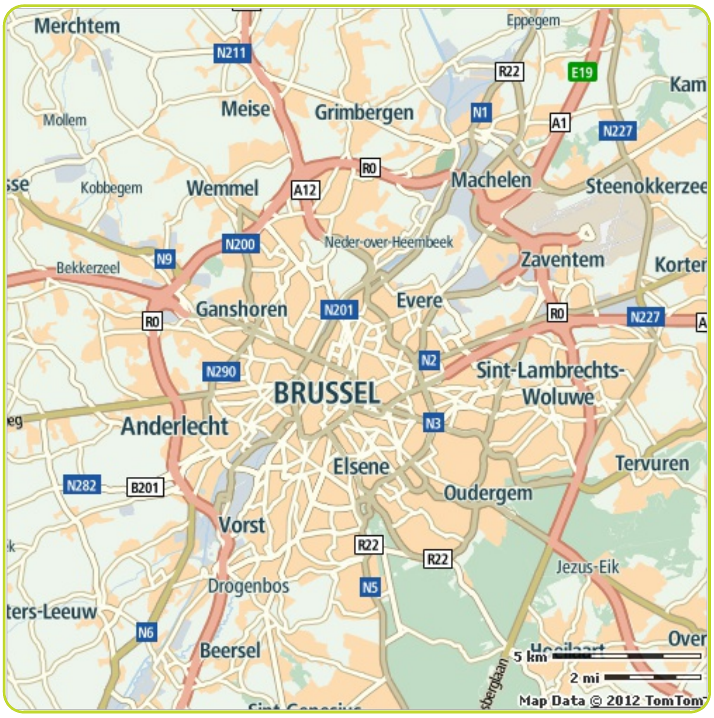
Delay per hour
driven in peak period



Comparison per quarter



Brussels



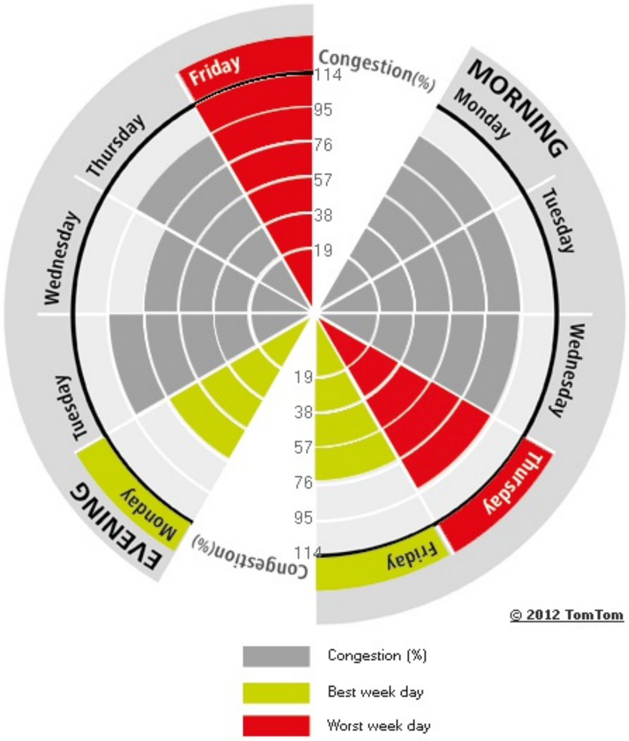
Congestion level

34%

Ranking

Ranking of city compared to continent	4/31
Previous ranking	4 ---
Congestion level on highways	27%
Congestion level on non-highways	40%
Delay per hour driven in peak period	50 min
Delay per year with a 30 min commute	104 h

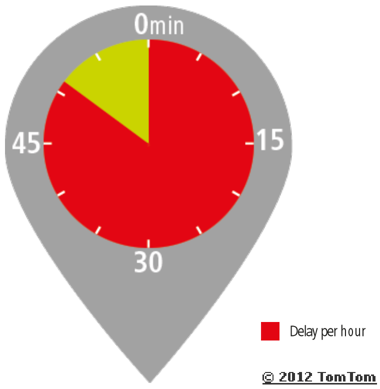
The weekly congestion pattern:
Best and worst peak periods of the week



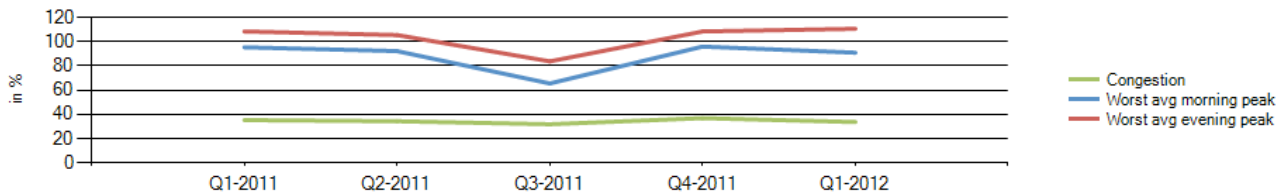
Most congested specific day	Fri 3 Feb 2012
Average free flow speed	52 km/h
Average speed during worst peak period	42 km/h
Total network length	1 301 km
Total network length highways	196 km
Total network length non-highways	1 105 km
Total vehicle kilometres	6 272 659 km

Congestion comparison

Delay per hour
driven in peak period



Comparison per quarter



Cologne



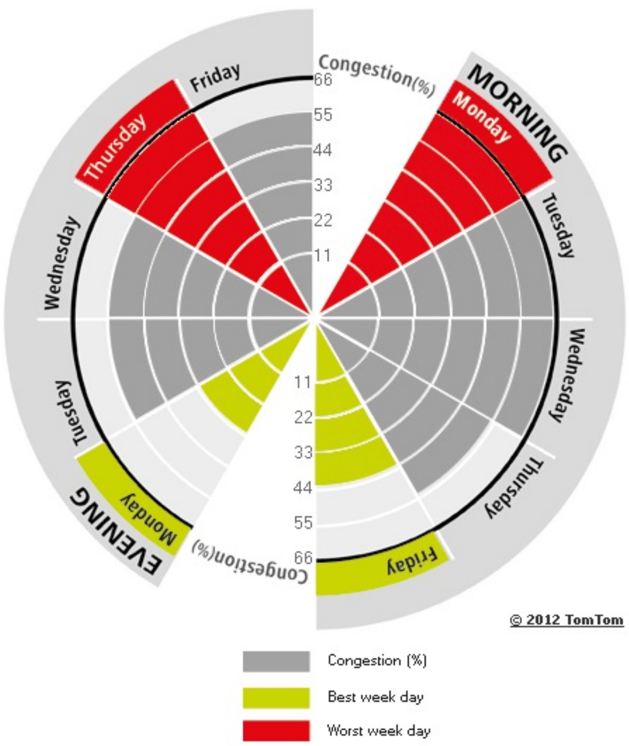
Congestion level

26%

Ranking	
Ranking of city compared to continent	11/31
Previous ranking	12
Congestion level on highways	24%
Congestion level on non-highways	32%
Delay per hour driven in peak period	30 min
Delay per year with a 30 min commute	76 h

The weekly congestion pattern:

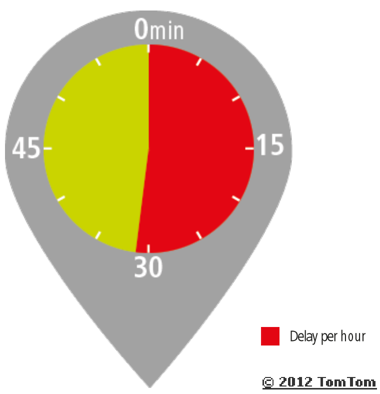
Best and worst peak periods of the week



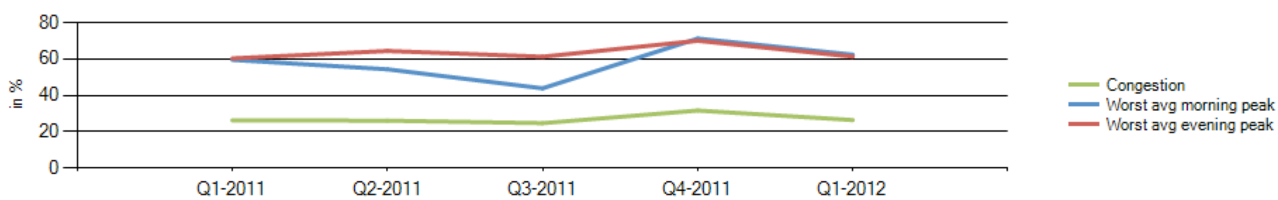
Most congested specific day	Tue 27 Mar 2012
Average free flow speed	56 km/h
Average speed during worst peak period	48 km/h
Total network length	1 946 km
Total network length highways	562 km
Total network length non-highways	1 384 km
Total vehicle kilometres	7 315 442 km

Congestion comparison

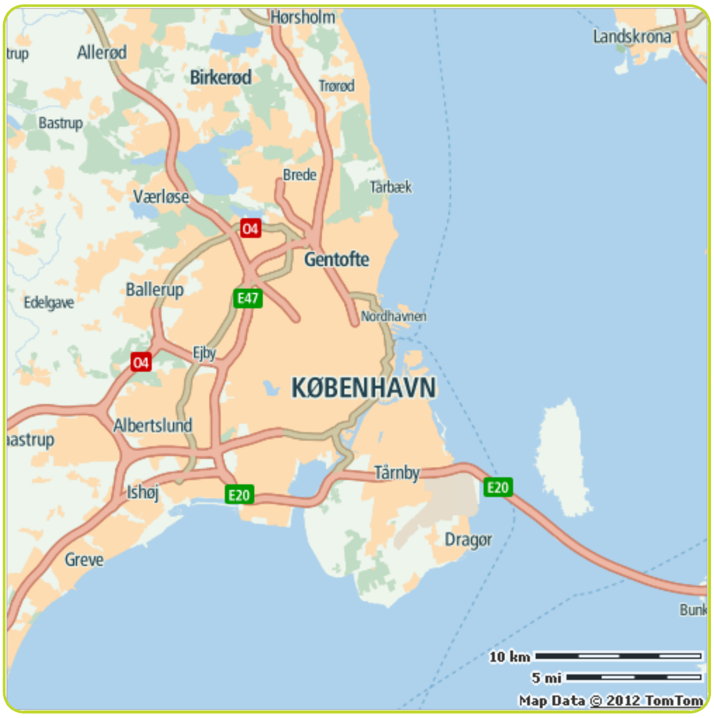
Delay per hour
driven in peak period



Comparison per quarter



Copenhagen



Congestion level

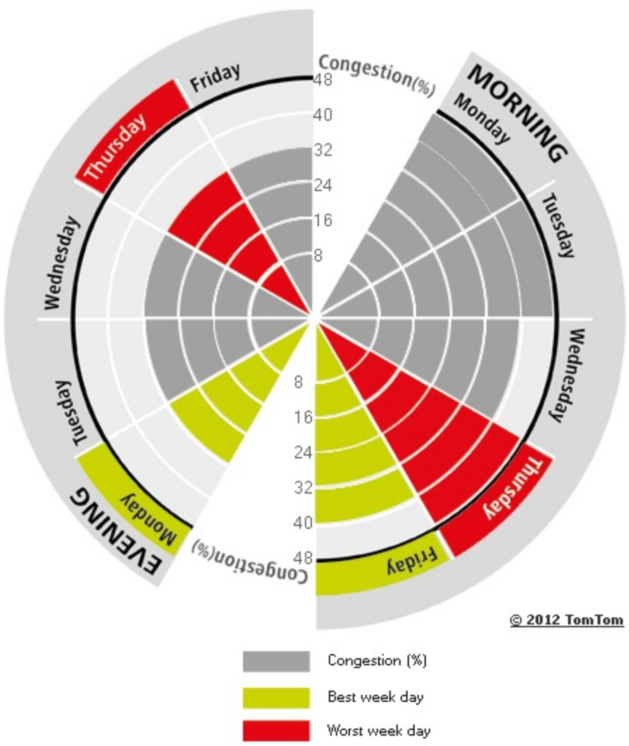
16%

Ranking

Ranking of city compared to continent	26/31
Previous ranking	29
Congestion level on highways	5%
Congestion level on non-highways	26%
Delay per hour driven in peak period	21 min
Delay per year with a 30 min commute	59 h

The weekly congestion pattern:

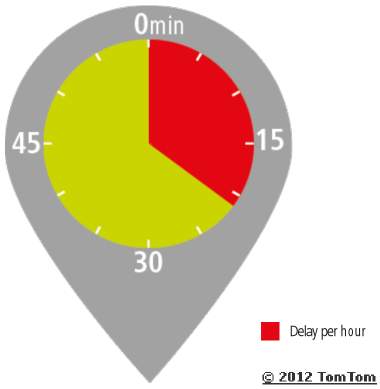
Best and worst peak periods of the week



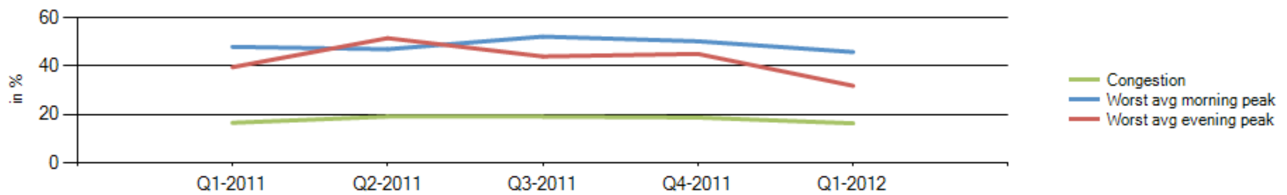
Most congested specific day	Thu 12 Jan 2012
Average free flow speed	59 km/h
Average speed during worst peak period	53 km/h
Total network length	1 313 km
Total network length highways	252 km
Total network length non-highways	1 061 km
Total vehicle kilometres	3 904 156 km

Congestion comparison

Delay per hour
driven in peak period



Comparison per quarter



Dublin



Congestion level

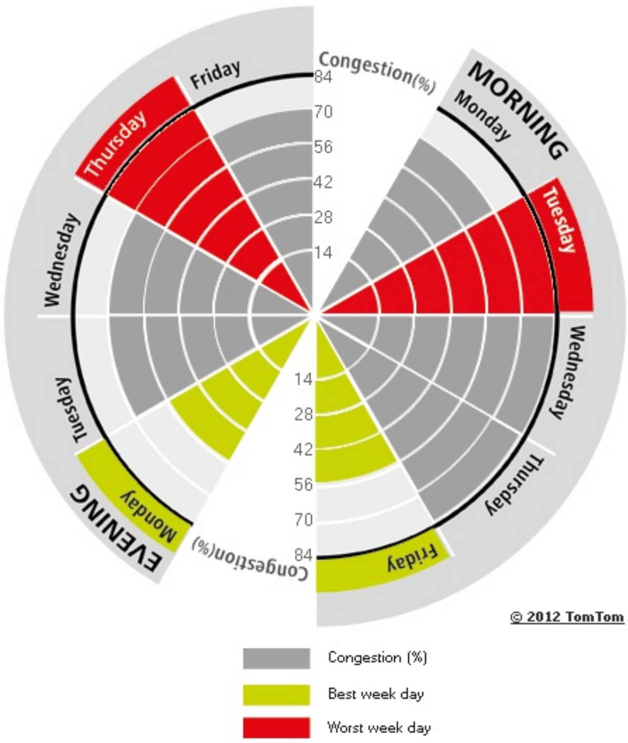
30%

Ranking

Ranking of city compared to continent	6/31
Previous ranking	5
Congestion level on highways	23%
Congestion level on non-highways	42%
Delay per hour driven in peak period	39 min
Delay per year with a 30 min commute	90 h

The weekly congestion pattern:

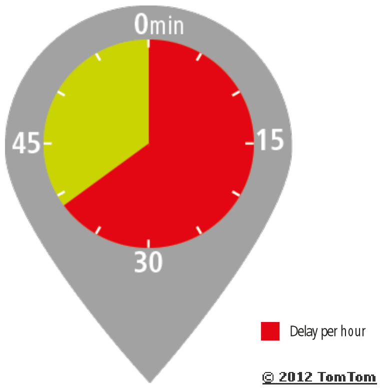
Best and worst peak periods of the week



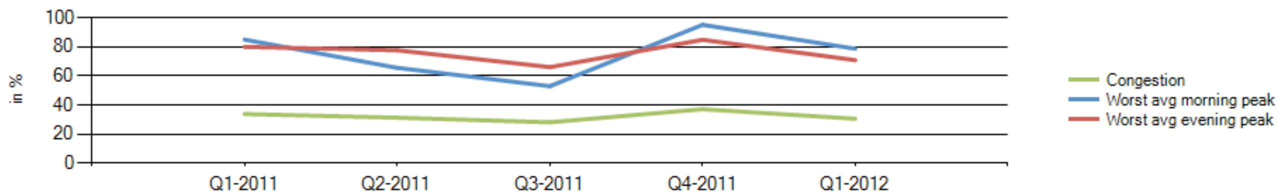
Most congested specific day	Wed 28 Mar 2012
Average free flow speed	55 km/h
Average speed during worst peak period	47 km/h
Total network length	642 km
Total network length highways	217 km
Total network length non-highways	426 km
Total vehicle kilometres	754 215 km

Congestion comparison

Delay per hour
driven in peak period



Comparison per quarter



Hamburg



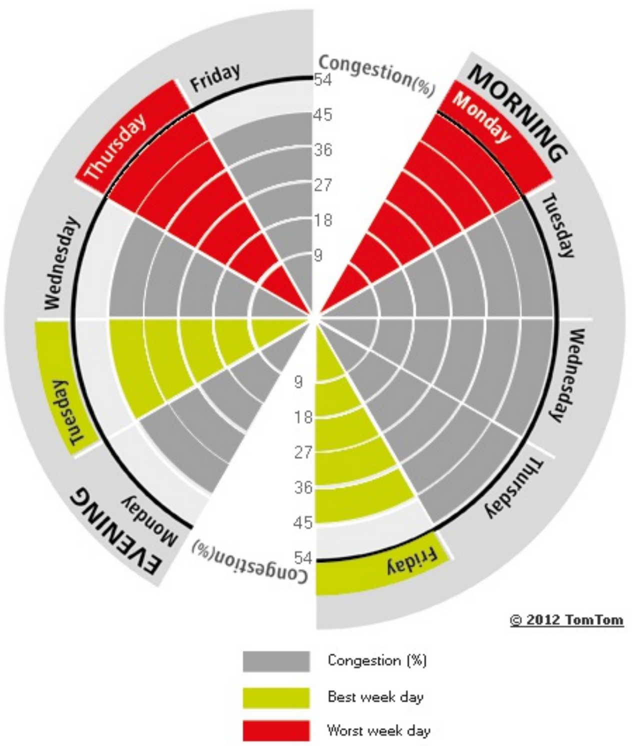
Congestion level

27%

Ranking	
Ranking of city compared to continent	10/31
Previous ranking	11 ▲
Congestion level on highways	17%
Congestion level on non-highways	35%
Delay per hour driven in peak period	27 min
Delay per year with a 30 min commute	71 h

The weekly congestion pattern:

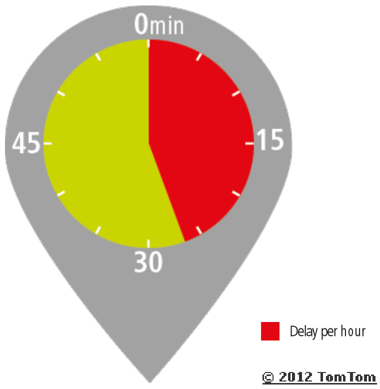
Best and worst peak periods of the week



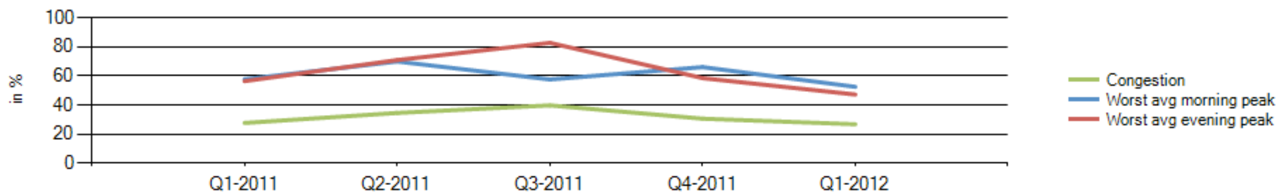
Most congested specific day	Thu 29 Mar 2012
Average free flow speed	55 km/h
Average speed during worst peak period	48 km/h
Total network length	2 153 km
Total network length highways	428 km
Total network length non-highways	1 725 km
Total vehicle kilometres	6 213 175 km

Congestion comparison

Delay per hour
driven in peak period



Comparison per quarter



Helsinki

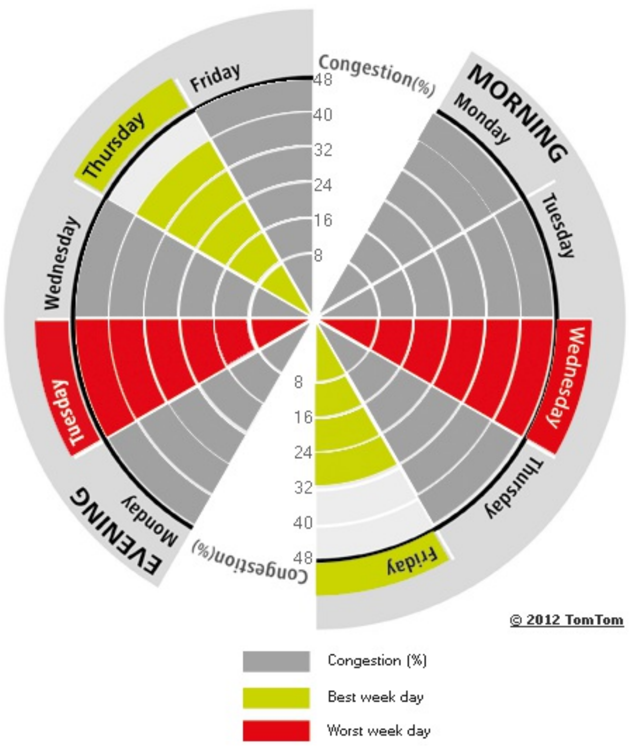


Congestion level

20%

Ranking	
Ranking of city compared to continent	23/31
Previous ranking	21
Congestion level on highways	15%
Congestion level on non-highways	26%
Delay per hour driven in peak period	25 min
Delay per year with a 30 min commute	67 h

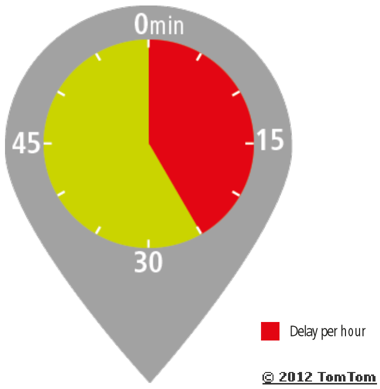
The weekly congestion pattern:
Best and worst peak periods of the week



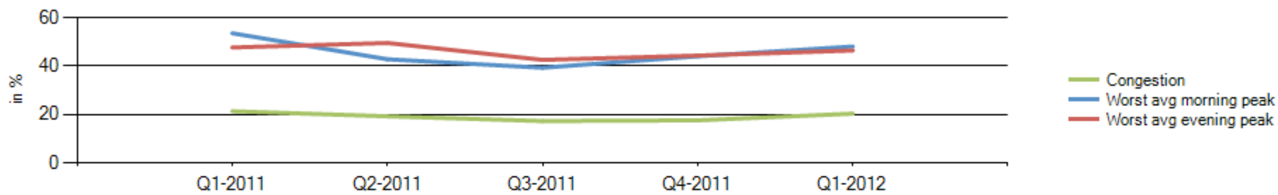
Most congested specific day	Fri 3 Feb 2012
Average free flow speed	61 km/h
Average speed during worst peak period	54 km/h
Total network length	1 099 km
Total network length highways	307 km
Total network length non-highways	792 km
Total vehicle kilometres	3 715 202 km

Congestion comparison

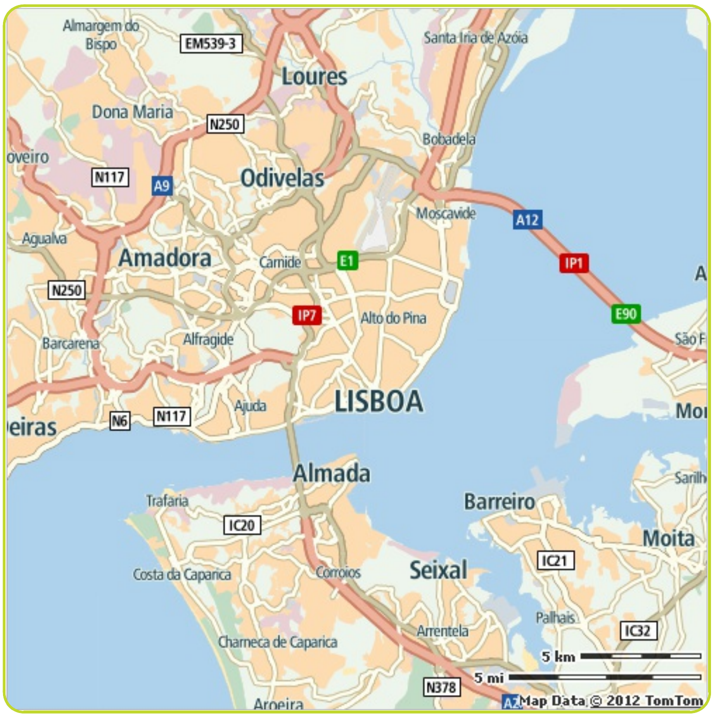
Delay per hour
driven in peak period



Comparison per quarter



Lisbon



Congestion level

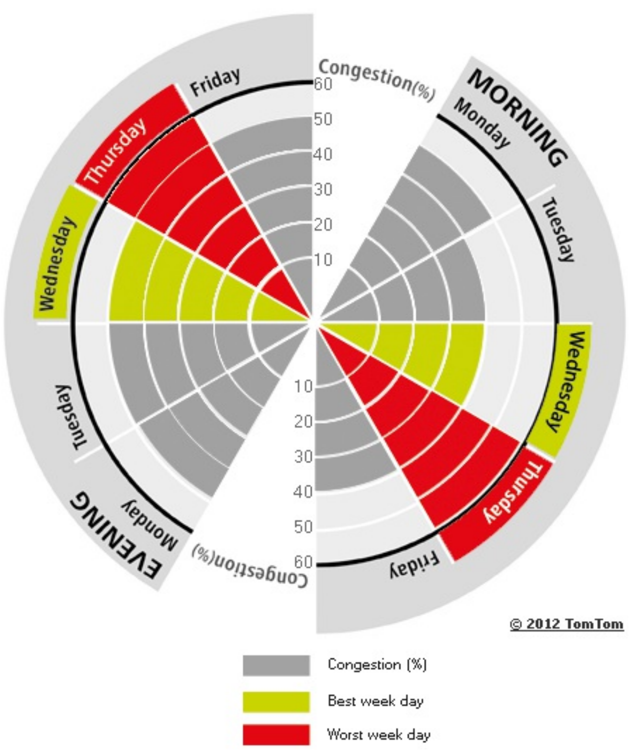
20%

Ranking

Ranking of city compared to continent	22/31
Previous ranking	10
Congestion level on highways	9%
Congestion level on non-highways	21%
Delay per hour driven in peak period	27 min
Delay per year with a 30 min commute	71 h

The weekly congestion pattern:

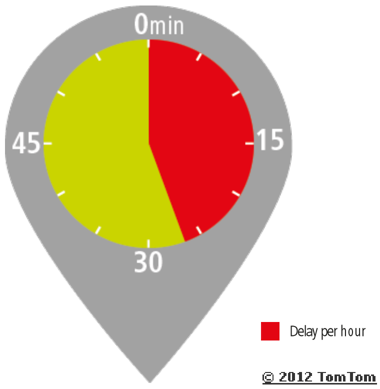
Best and worst peak periods of the week



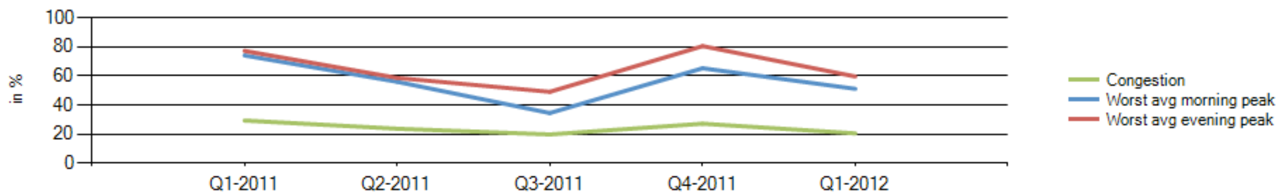
Most congested specific day	Thu 2 Feb 2012
Average free flow speed	59 km/h
Average speed during worst peak period	51 km/h
Total network length	529 km
Total network length highways	25 km
Total network length non-highways	504 km
Total vehicle kilometres	1 484 939 km

Congestion comparison

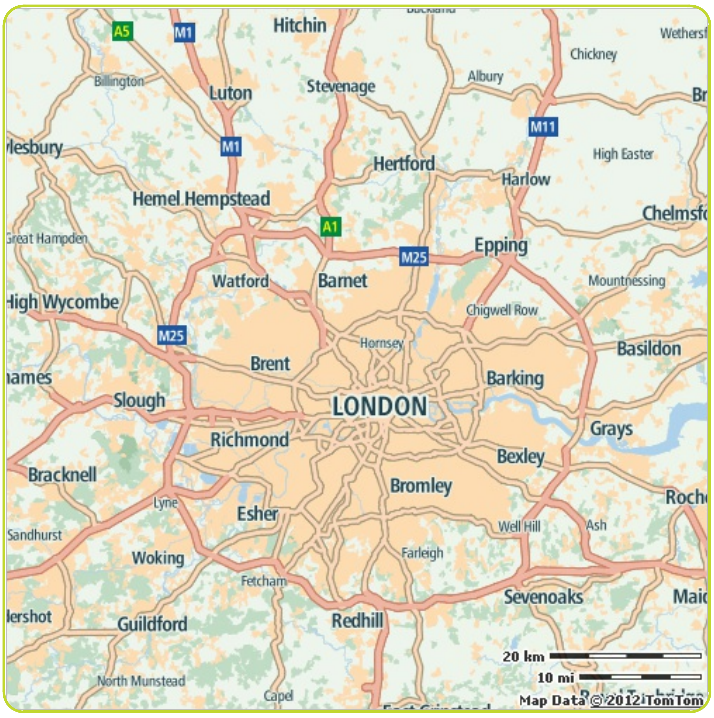
Delay per hour
driven in peak period



Comparison per quarter



London



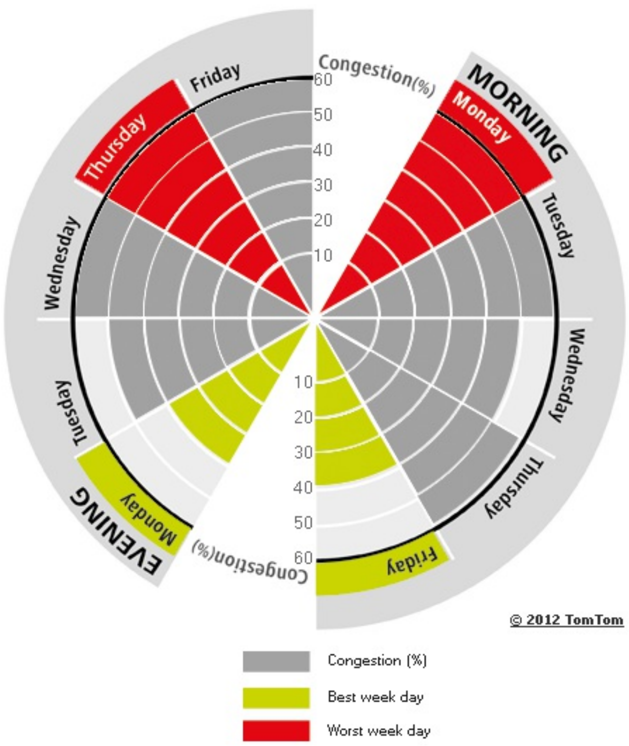
Congestion level

27%

Ranking

Ranking of city compared to continent	8/31
Previous ranking	9
Congestion level on highways	10%
Congestion level on non-highways	38%
Delay per hour driven in peak period	29 min
Delay per year with a 30 min commute	74 h

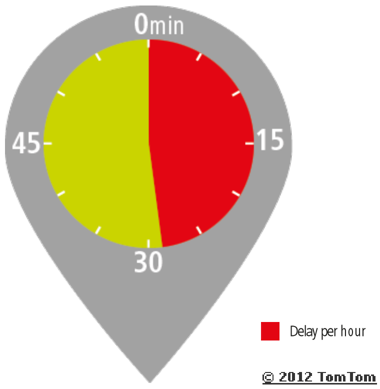
The weekly congestion pattern:
Best and worst peak periods of the week



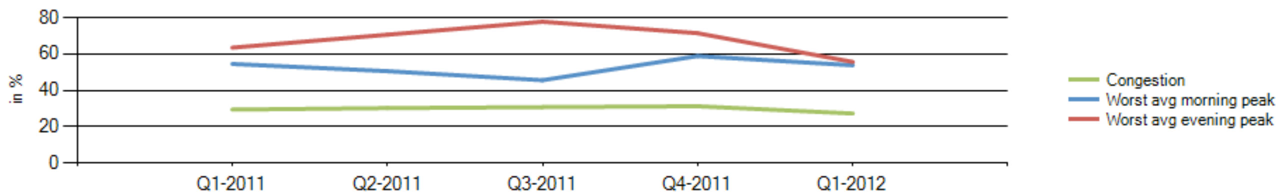
Most congested specific day	Thu 15 Mar 2012
Average free flow speed	55 km/h
Average speed during worst peak period	46 km/h
Total network length	7 318 km
Total network length highways	700 km
Total network length non-highways	6 618 km
Total vehicle kilometres	65 250 001 km

Congestion comparison

Delay per hour
driven in peak period



Comparison per quarter



Luxembourg



Congestion level

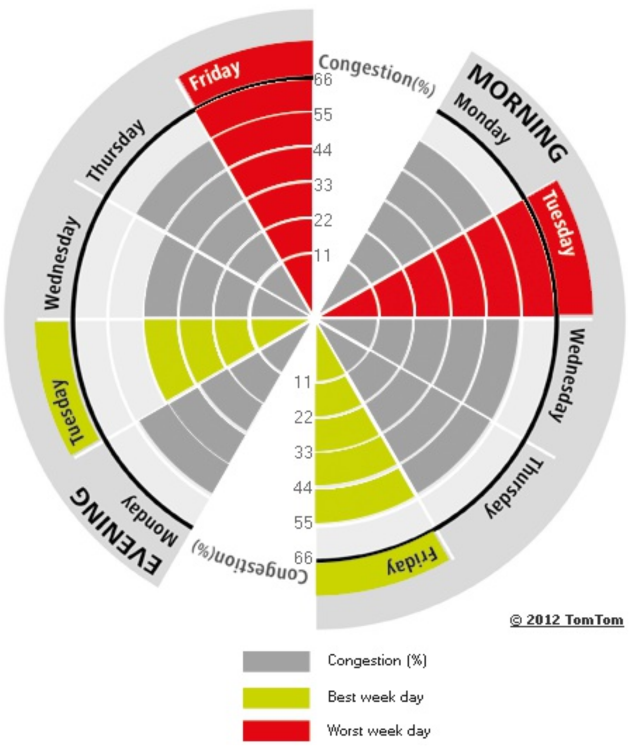
21%

Ranking

Ranking of city compared to continent	20/31
Previous ranking	24
Congestion level on highways	12%
Congestion level on non-highways	34%
Delay per hour driven in peak period	29 min
Delay per year with a 30 min commute	74 h

The weekly congestion pattern:

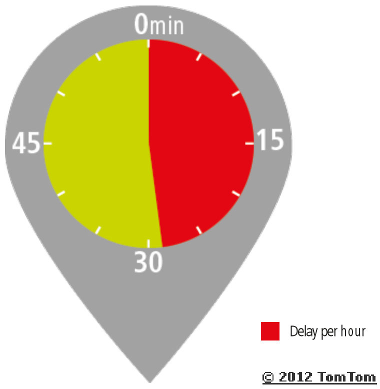
Best and worst peak periods of the week



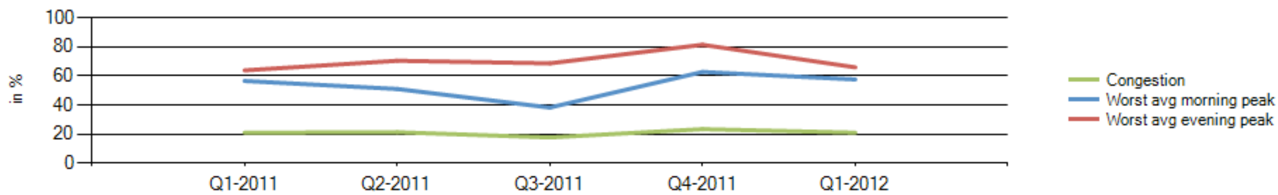
Most congested specific day	Fri 13 Jan 2012
Average free flow speed	59 km/h
Average speed during worst peak period	52 km/h
Total network length	321 km
Total network length highways	70 km
Total network length non-highways	251 km
Total vehicle kilometres	612 753 km

Congestion comparison

Delay per hour driven in peak period



Comparison per quarter



Madrid



Congestion level

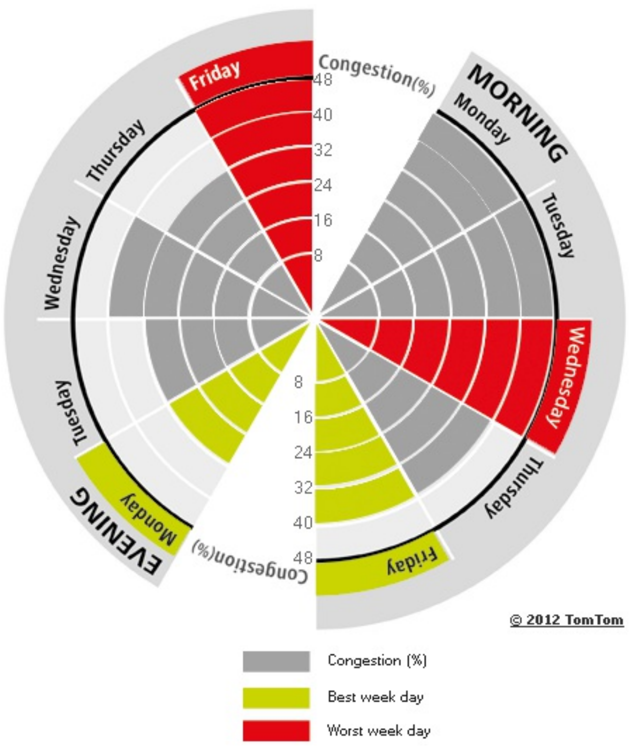
16%

Ranking

Ranking of city compared to continent	27/31
Previous ranking	27 ---
Congestion level on highways	9%
Congestion level on non-highways	23%
Delay per hour driven in peak period	22 min
Delay per year with a 30 min commute	61 h

The weekly congestion pattern:

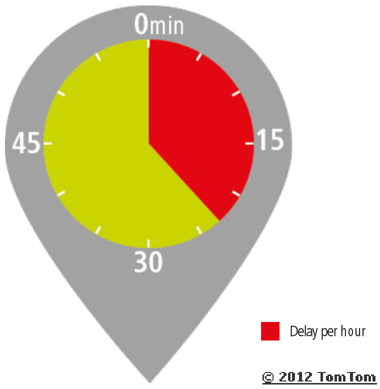
Best and worst peak periods of the week



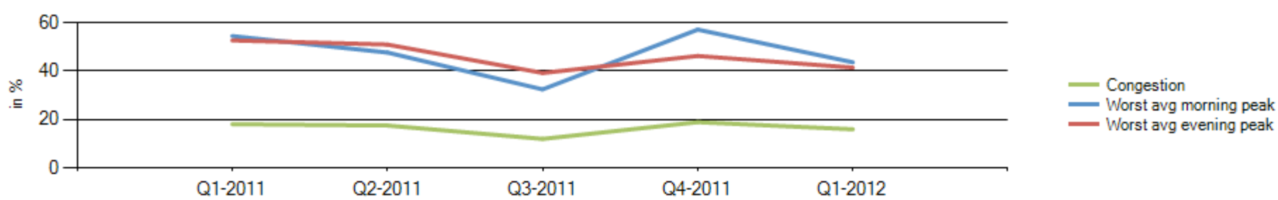
Most congested specific day	Wed 21 Mar 2012
Average free flow speed	68 km/h
Average speed during worst peak period	63 km/h
Total network length	3 526 km
Total network length highways	1 217 km
Total network length non-highways	2 309 km
Total vehicle kilometres	18 481 534 km

Congestion comparison

Delay per hour
driven in peak period



Comparison per quarter



Marseille



Congestion level

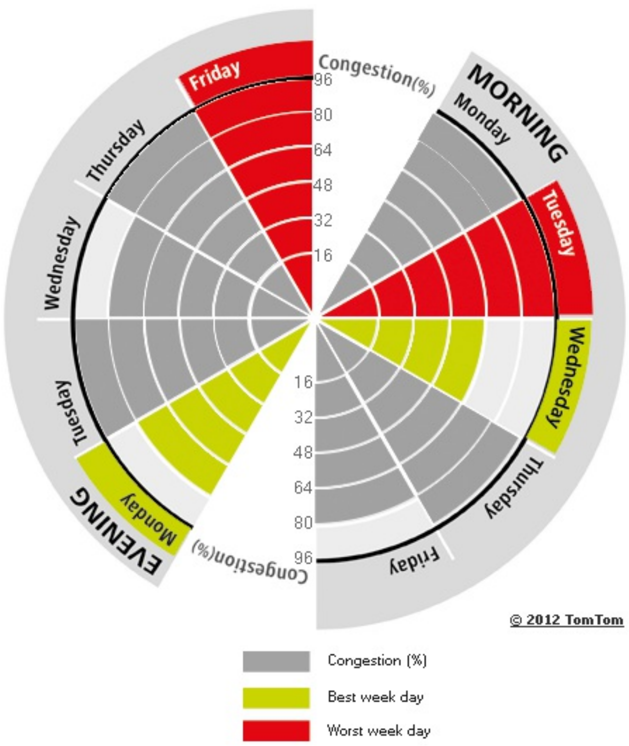
41%

Ranking

Ranking of city compared to continent	2/31
Previous ranking	2 ---
Congestion level on highways	23%
Congestion level on non-highways	52%
Delay per hour driven in peak period	47 min
Delay per year with a 30 min commute	101 h

The weekly congestion pattern:

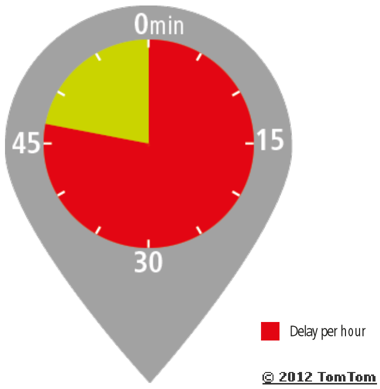
Best and worst peak periods of the week



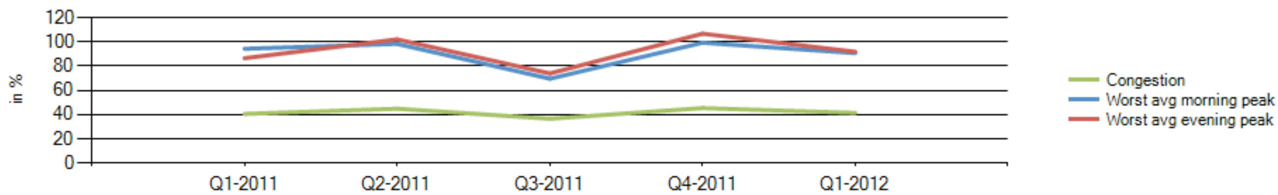
Most congested specific day	Fri 10 Feb 2012
Average free flow speed	51 km/h
Average speed during worst peak period	40 km/h
Total network length	491 km
Total network length highways	78 km
Total network length non-highways	413 km
Total vehicle kilometres	962 417 km

Congestion comparison

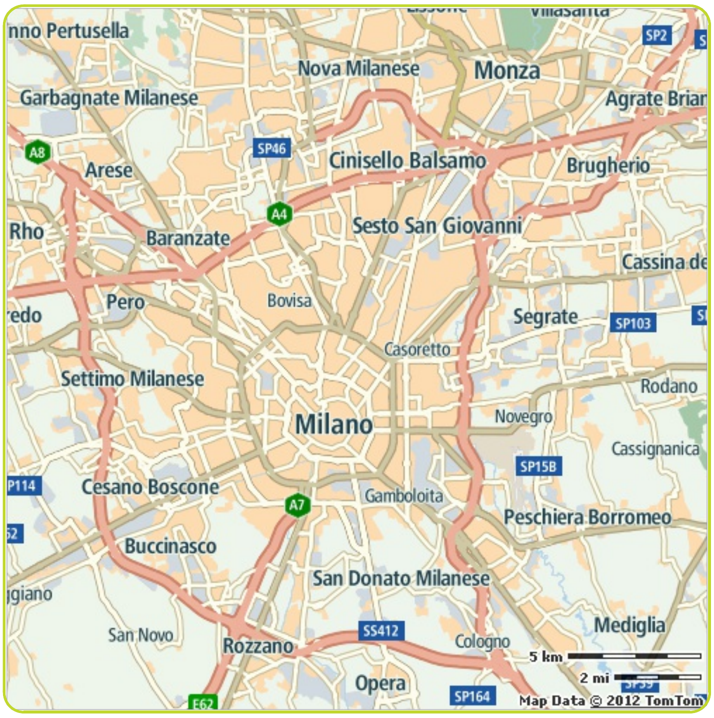
Delay per hour driven in peak period



Comparison per quarter



Milan



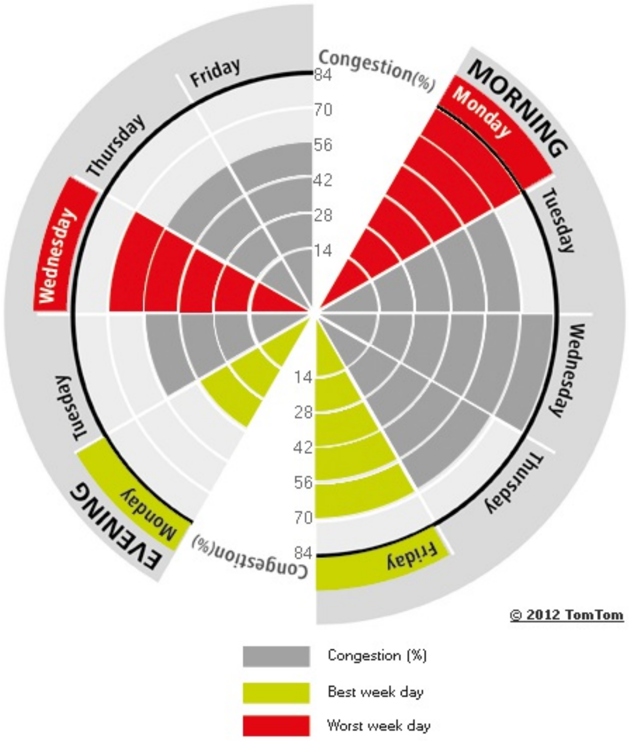
Congestion level

26%

Ranking	
Ranking of city compared to continent	12/31
Previous ranking	7
Congestion level on highways	18%
Congestion level on non-highways	32%
Delay per hour driven in peak period	37 min
Delay per year with a 30 min commute	87 h

The weekly congestion pattern:

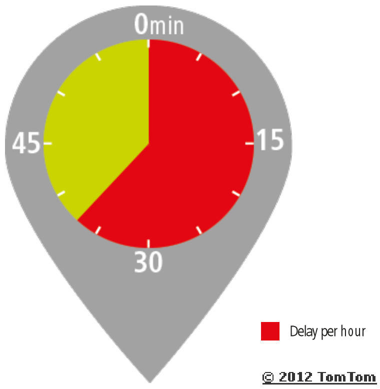
Best and worst peak periods of the week



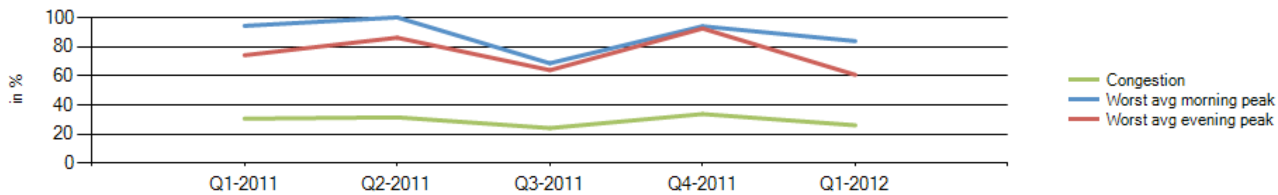
Most congested specific day	Wed 28 Mar 2012
Average free flow speed	54 km/h
Average speed during worst peak period	45 km/h
Total network length	2 357 km
Total network length highways	265 km
Total network length non-highways	2 092 km
Total vehicle kilometres	9 726 993 km

Congestion comparison

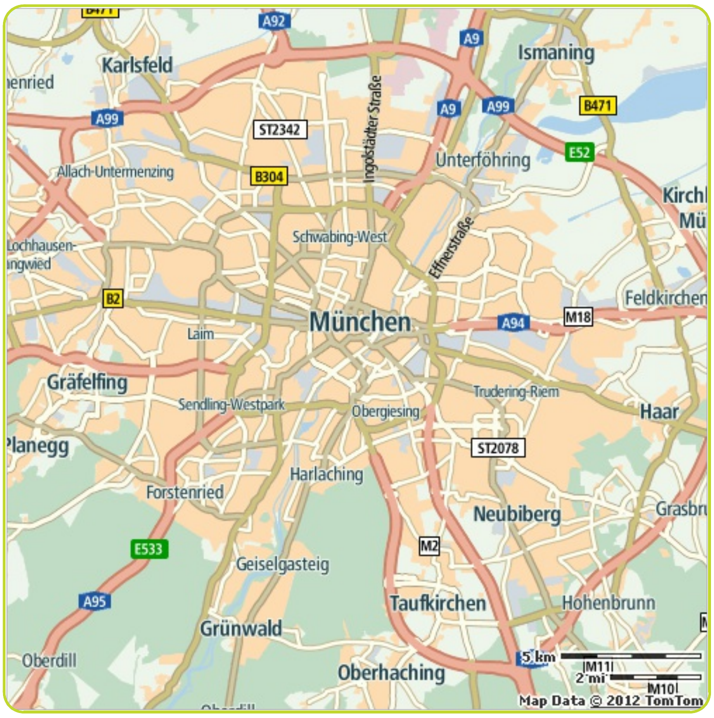
Delay per hour
driven in peak period



Comparison per quarter



Munich



Congestion level

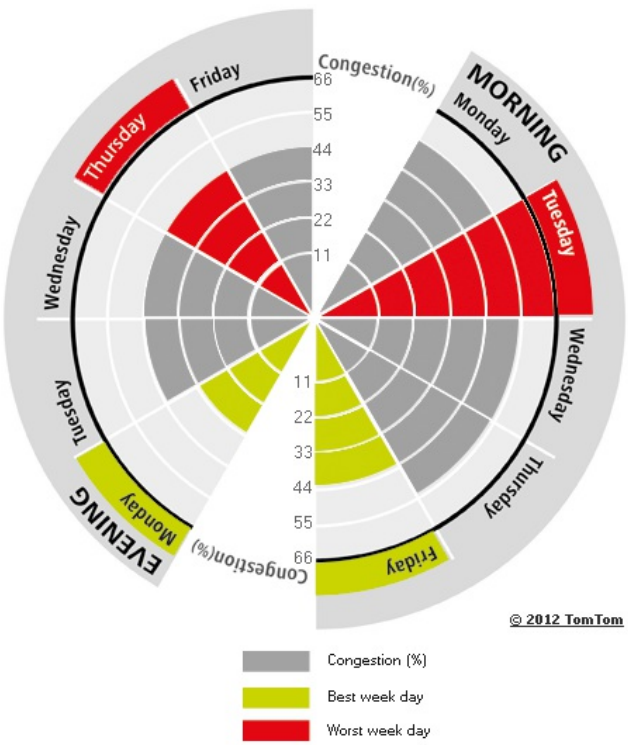
23%

Ranking

Ranking of city compared to continent	18/31
Previous ranking	22
Congestion level on highways	17%
Congestion level on non-highways	33%
Delay per hour driven in peak period	25 min
Delay per year with a 30 min commute	67 h

The weekly congestion pattern:

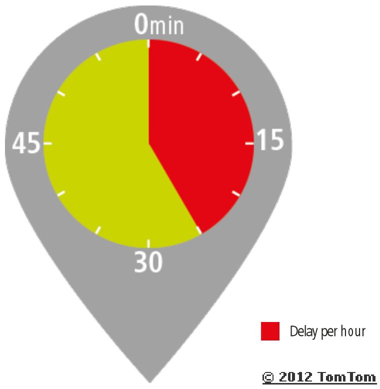
Best and worst peak periods of the week



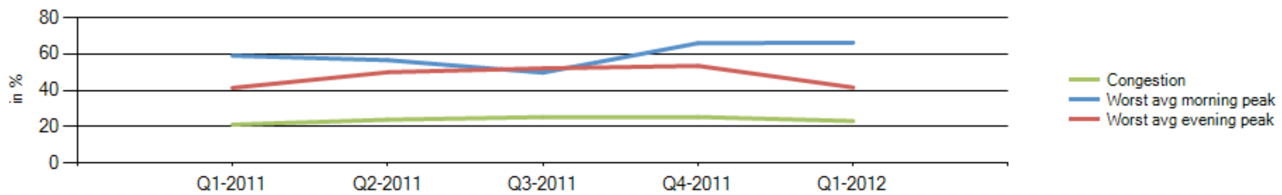
Most congested specific day	Tue 7 Feb 2012
Average free flow speed	58 km/h
Average speed during worst peak period	49 km/h
Total network length	1 874 km
Total network length highways	530 km
Total network length non-highways	1 344 km
Total vehicle kilometres	5 678 081 km

Congestion comparison

Delay per hour driven in peak period



Comparison per quarter



Naples



Congestion level

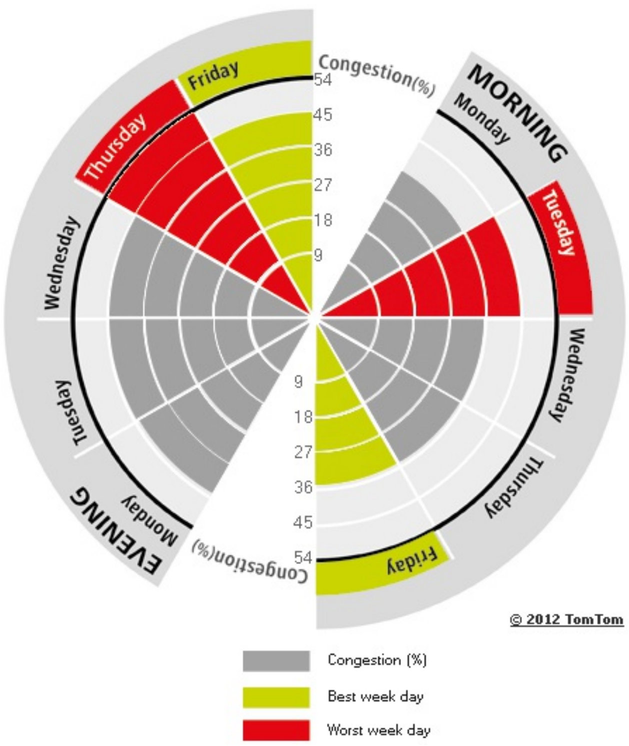
24%

Ranking

Ranking of city compared to continent	16/31
Previous ranking	13
Congestion level on highways	10%
Congestion level on non-highways	37%
Delay per hour driven in peak period	23 min
Delay per year with a 30 min commute	63 h

The weekly congestion pattern:

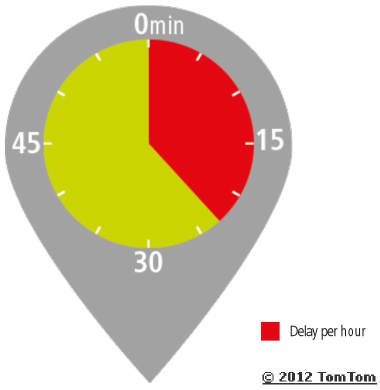
Best and worst peak periods of the week



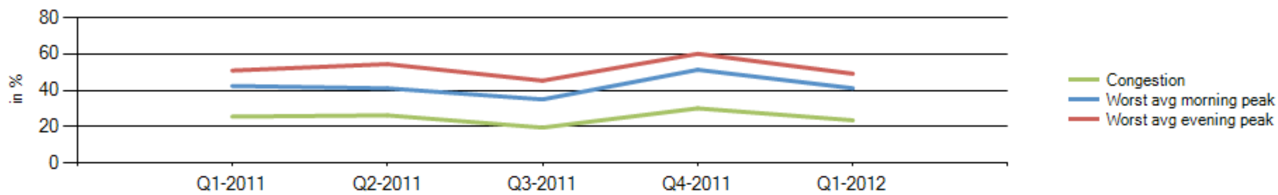
Most congested specific day	Wed 29 Feb 2012
Average free flow speed	49 km/h
Average speed during worst peak period	42 km/h
Total network length	1 655 km
Total network length highways	251 km
Total network length non-highways	1 404 km
Total vehicle kilometres	1 810 645 km

Congestion comparison

Delay per hour driven in peak period



Comparison per quarter



Oslo



Congestion level

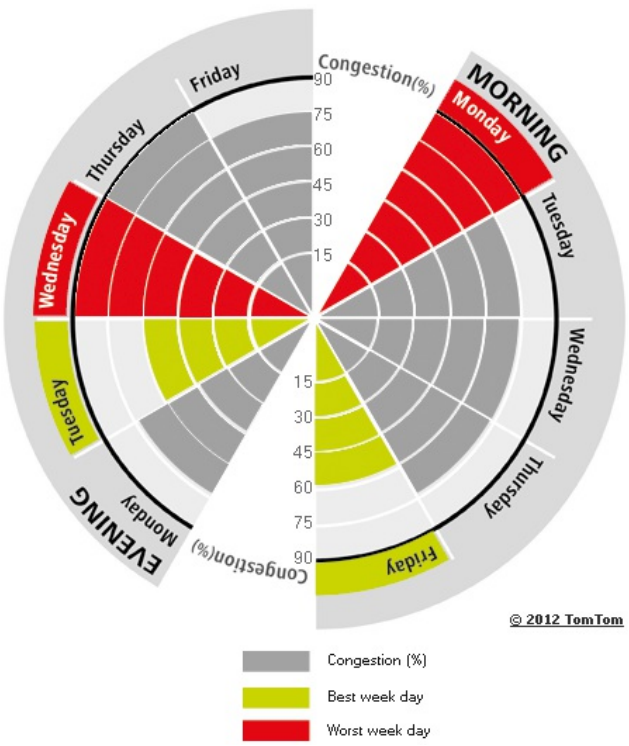
24%

Ranking

Ranking of city compared to continent	15/31
Previous ranking	14
Congestion level on highways	20%
Congestion level on non-highways	31%
Delay per hour driven in peak period	40 min
Delay per year with a 30 min commute	92 h

The weekly congestion pattern:

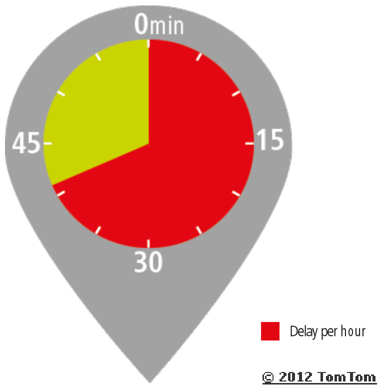
Best and worst peak periods of the week



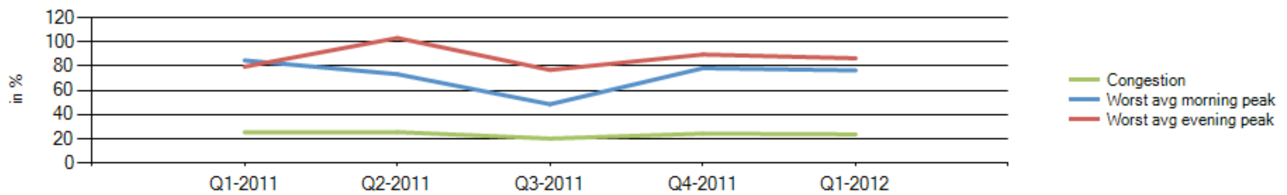
Most congested specific day	Mon 9 Jan 2012
Average free flow speed	53 km/h
Average speed during worst peak period	44 km/h
Total network length	538 km
Total network length highways	126 km
Total network length non-highways	411 km
Total vehicle kilometres	1 028 931 km

Congestion comparison

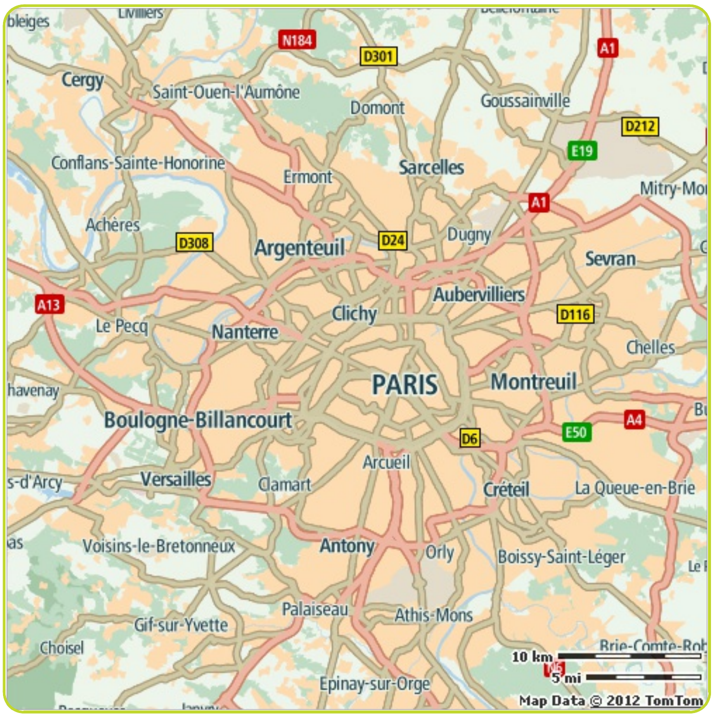
Delay per hour driven in peak period



Comparison per quarter



Paris



Congestion level

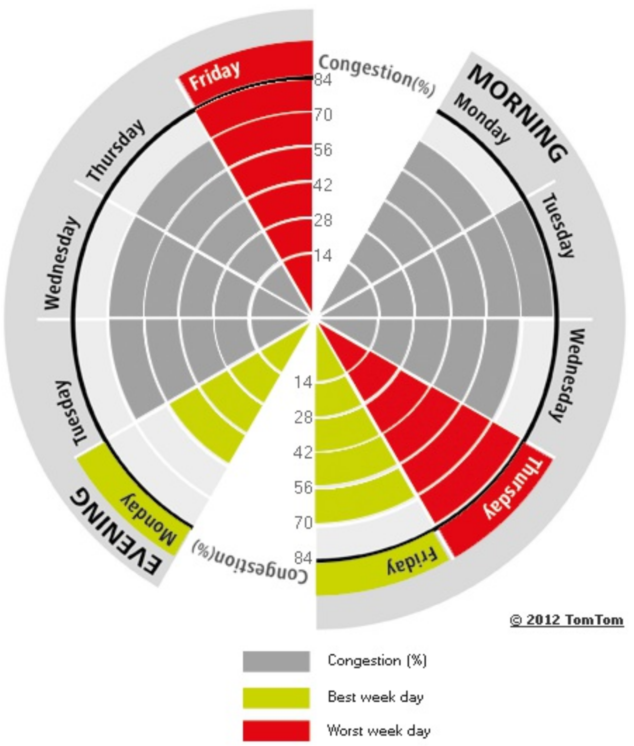
32%

Ranking

Ranking of city compared to continent	5/31
Previous ranking	6
Congestion level on highways	29%
Congestion level on non-highways	36%
Delay per hour driven in peak period	40 min
Delay per year with a 30 min commute	92 h

The weekly congestion pattern:

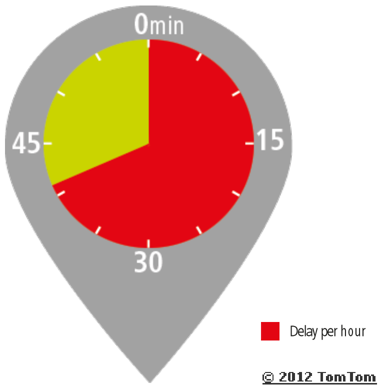
Best and worst peak periods of the week



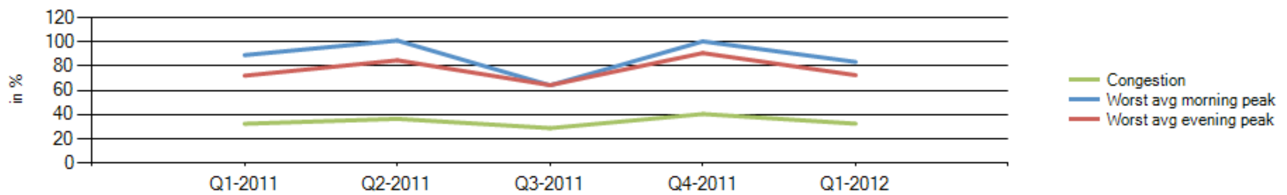
Most congested specific day	Tue 24 Jan 2012
Average free flow speed	51 km/h
Average speed during worst peak period	43 km/h
Total network length	7 845 km
Total network length highways	1 434 km
Total network length non-highways	6 411 km
Total vehicle kilometres	58 009 623 km

Congestion comparison

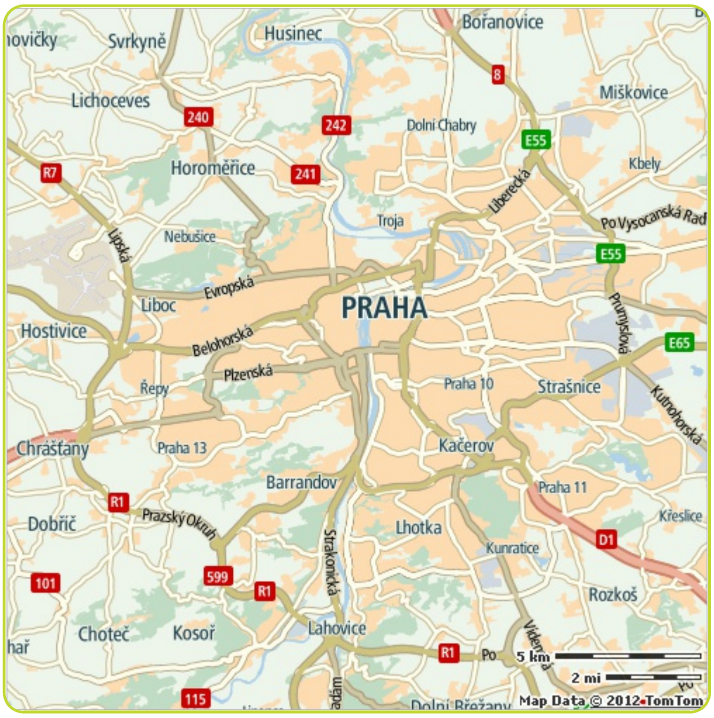
Delay per hour
driven in peak period



Comparison per quarter



Prague



Congestion level

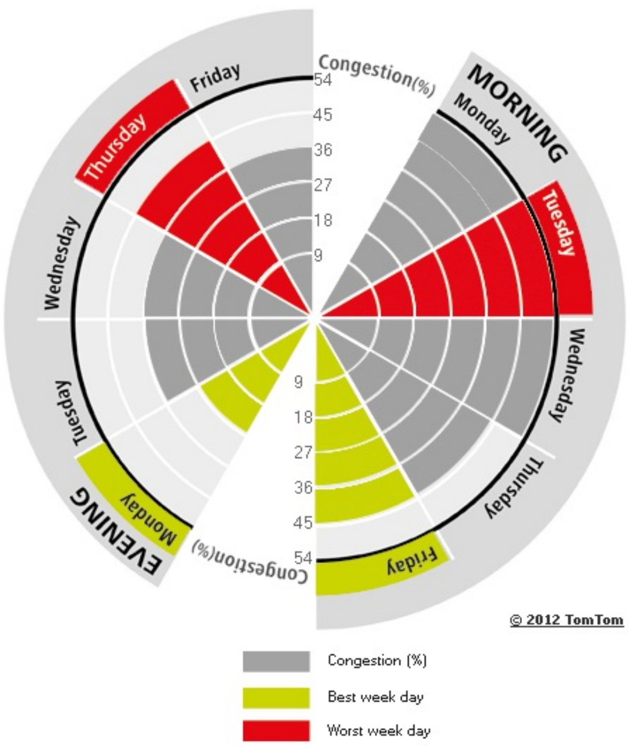
20%

Ranking

Ranking of city compared to continent	24/31
Previous ranking	20
Congestion level on highways	13%
Congestion level on non-highways	27%
Delay per hour driven in peak period	23 min
Delay per year with a 30 min commute	63 h

The weekly congestion pattern:

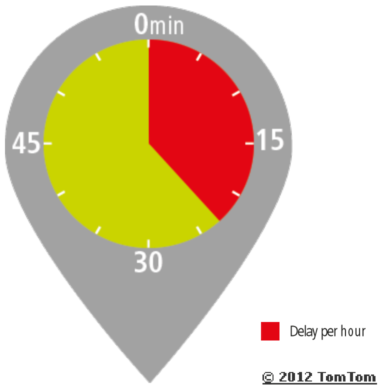
Best and worst peak periods of the week



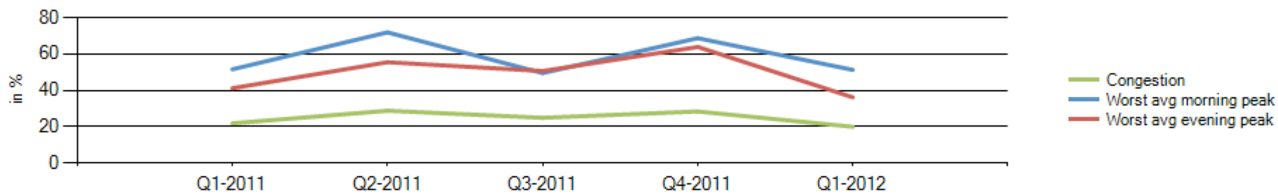
Most congested specific day	Tue 7 Feb 2012
Average free flow speed	56 km/h
Average speed during worst peak period	49 km/h
Total network length	1 049 km
Total network length highways	234 km
Total network length non-highways	815 km
Total vehicle kilometres	2 525 329 km

Congestion comparison

Delay per hour
driven in peak period



Comparison per quarter



Rome



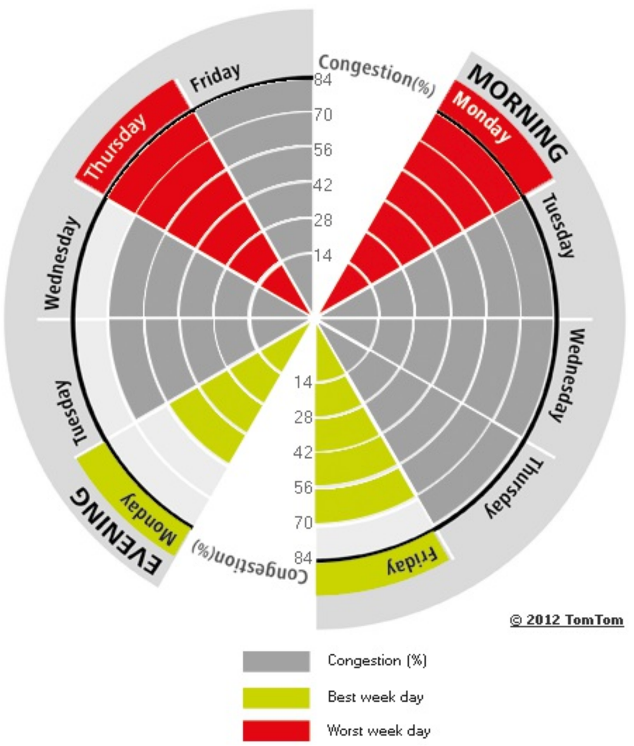
Congestion level

34%

Ranking	
Ranking of city compared to continent	3/31
Previous ranking	3 ---
Congestion level on highways	24%
Congestion level on non-highways	40%
Delay per hour driven in peak period	42 min
Delay per year with a 30 min commute	94 h

The weekly congestion pattern:

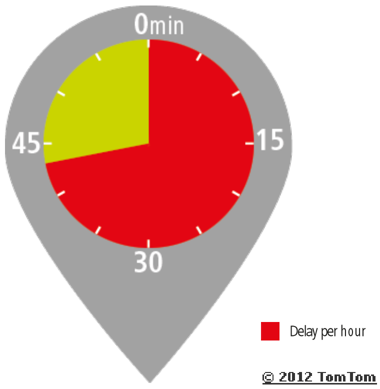
Best and worst peak periods of the week



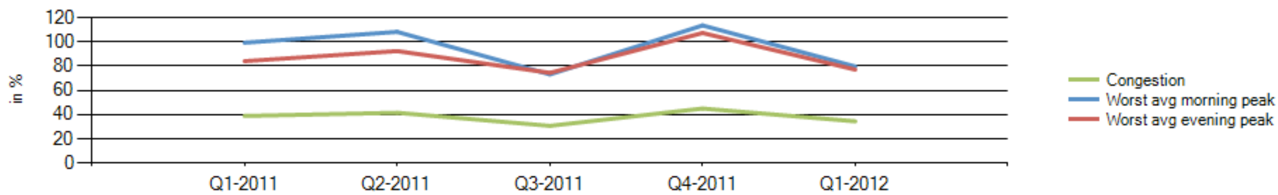
Most congested specific day	Fri 3 Feb 2012
Average free flow speed	60 km/h
Average speed during worst peak period	48 km/h
Total network length	1 283 km
Total network length highways	217 km
Total network length non-highways	1 066 km
Total vehicle kilometres	5 541 179 km

Congestion comparison

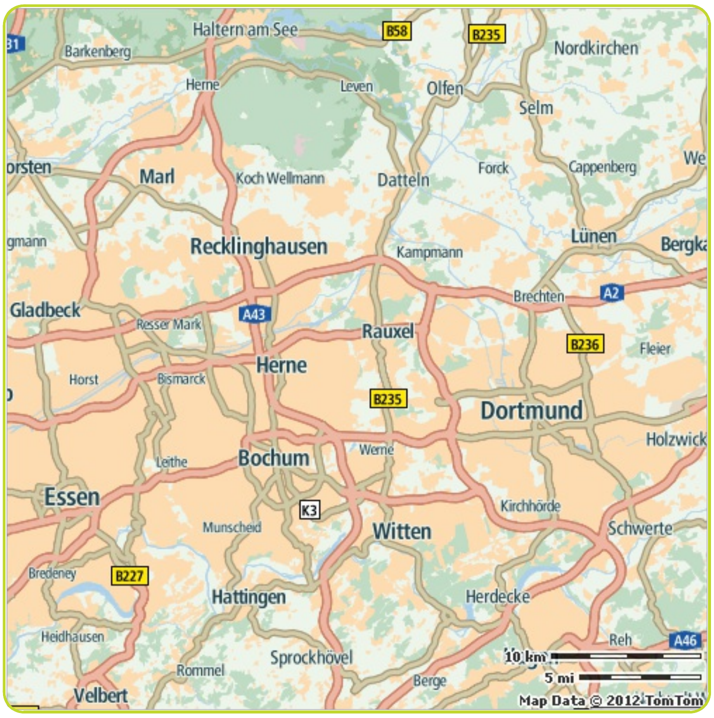
Delay per hour
driven in peak period



Comparison per quarter



Ruhr region east

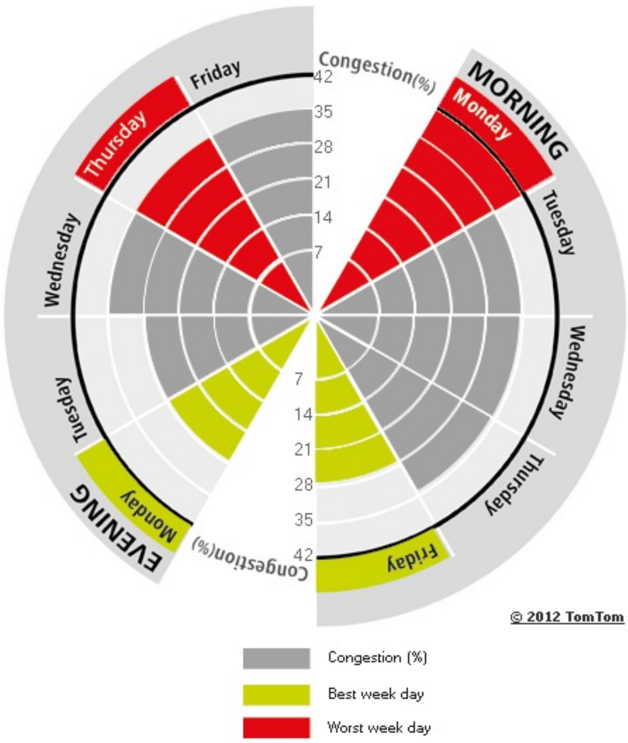


Congestion level

15%

Ranking	
Ranking of city compared to continent	28/31
Previous ranking	30 ▲
Congestion level on highways	11%
Congestion level on non-highways	24%
Delay per hour driven in peak period	17 min
Delay per year with a 30 min commute	50 h

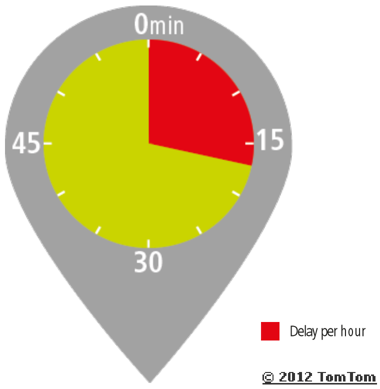
The weekly congestion pattern:
Best and worst peak periods of the week



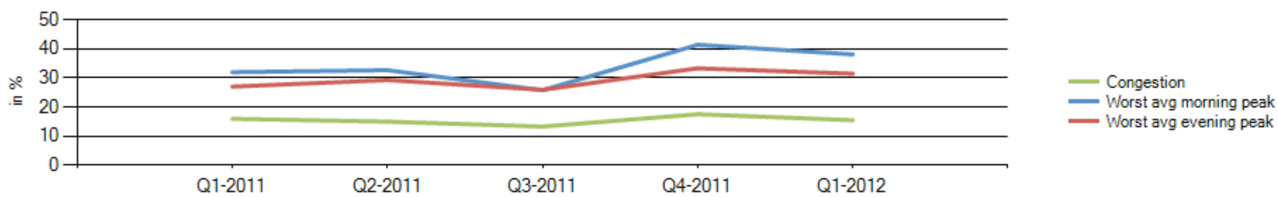
Most congested specific day	Thu 19 Jan 2012
Average free flow speed	55 km/h
Average speed during worst peak period	50 km/h
Total network length	3 022 km
Total network length highways	624 km
Total network length non-highways	2 399 km
Total vehicle kilometres	6 735 568 km

Congestion comparison

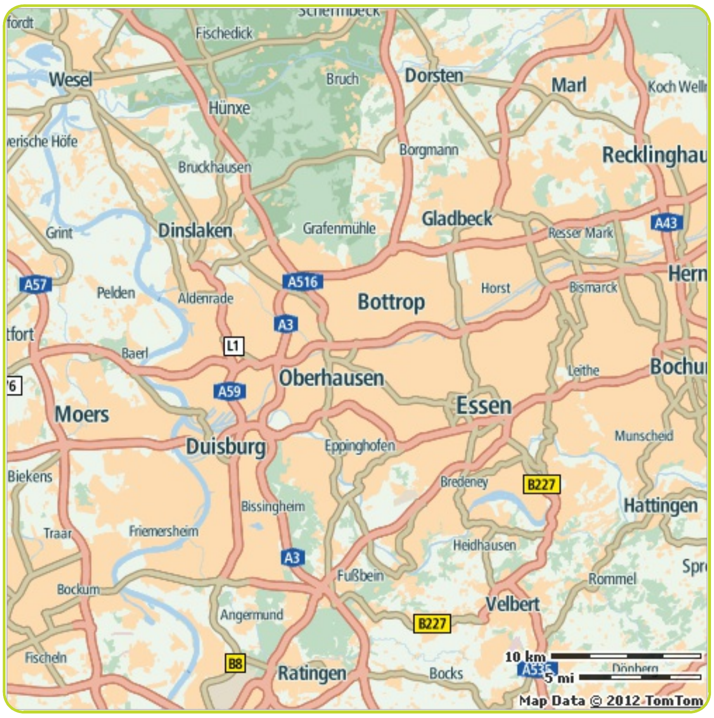
Delay per hour
driven in peak period



Comparison per quarter



Ruhr region west

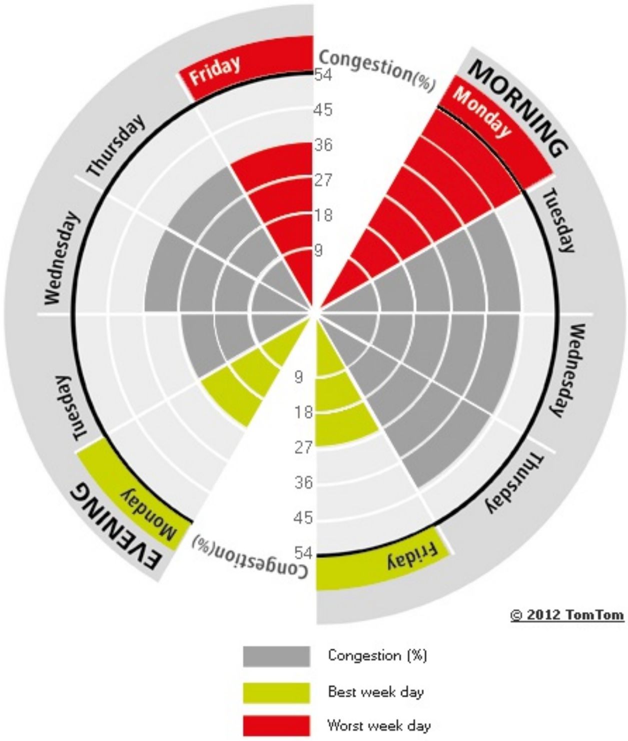


Congestion level

17%

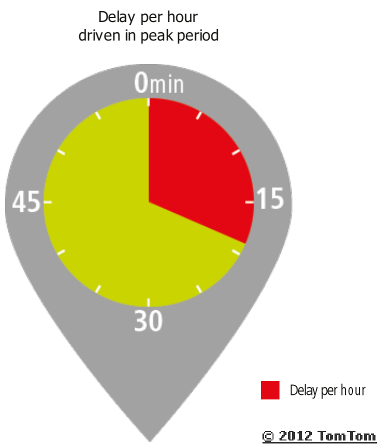
Ranking

Ranking of city compared to continent	25/31
Previous ranking	26
Congestion level on highways	13%
Congestion level on non-highways	28%
Delay per hour driven in peak period	19 min
Delay per year with a 30 min commute	55 h

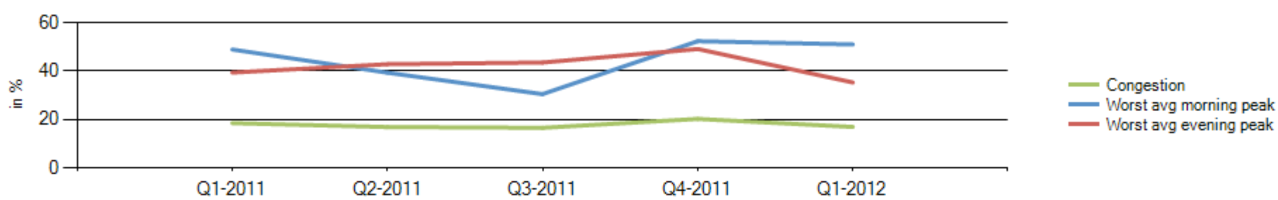


Most congested specific day	Wed 21 Mar 2012
Average free flow speed	55 km/h
Average speed during worst peak period	48 km/h
Total network length	2 995 km
Total network length highways	681 km
Total network length non-highways	2 314 km
Total vehicle kilometres	9 095 245 km

Congestion comparison



Comparison per quarter



Stockholm



Congestion level

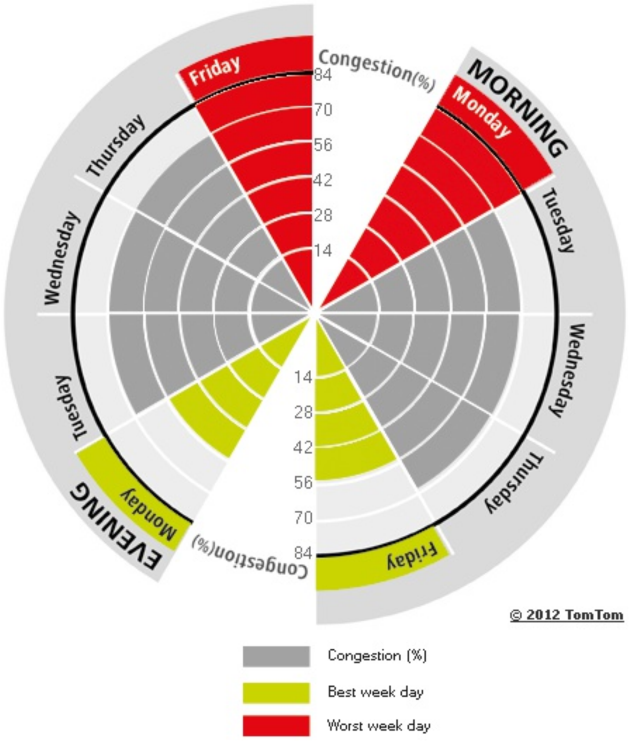
27%

Ranking

Ranking of city compared to continent	9/31
Previous ranking	8
Congestion level on highways	22%
Congestion level on non-highways	32%
Delay per hour driven in peak period	38 min
Delay per year with a 30 min commute	89 h

The weekly congestion pattern:

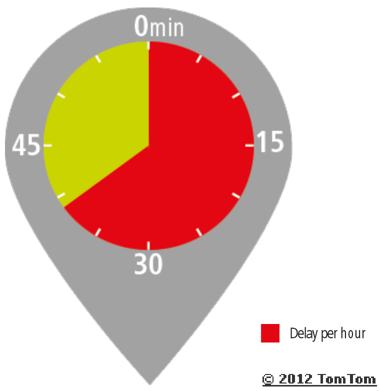
Best and worst peak periods of the week



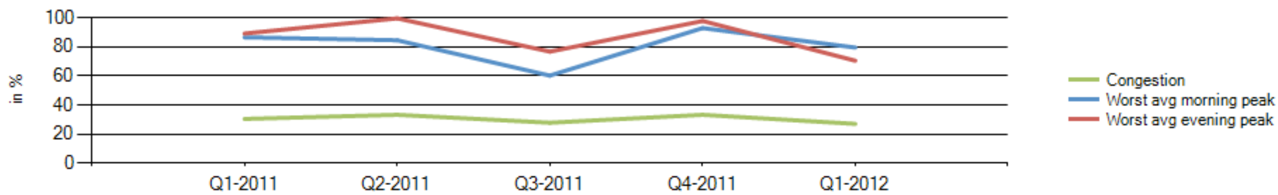
Most congested specific day	Fri 3 Feb 2012
Average free flow speed	53 km/h
Average speed during worst peak period	45 km/h
Total network length	1 112 km
Total network length highways	227 km
Total network length non-highways	885 km
Total vehicle kilometres	1 476 549 km

Congestion comparison

Delay per hour
driven in peak period



Comparison per quarter



Turin



Congestion level

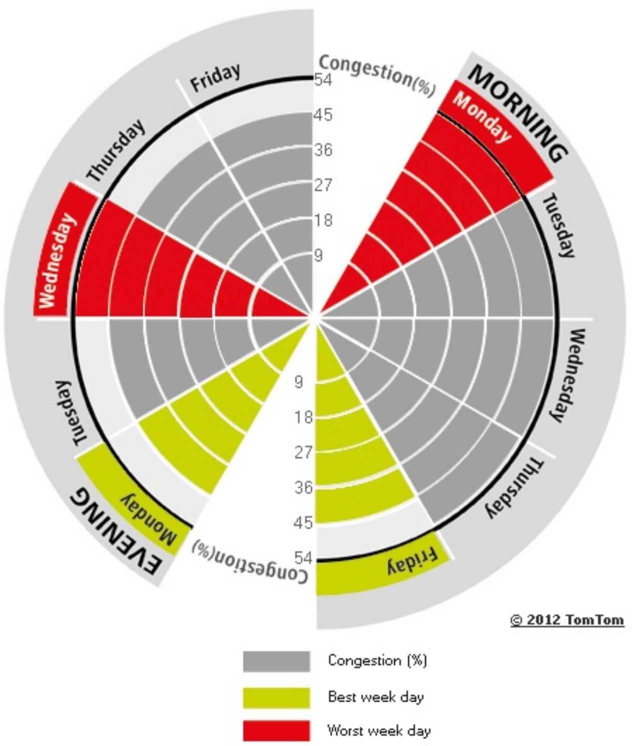
23%

Ranking

Ranking of city compared to continent	17/31
Previous ranking	18 ▲
Congestion level on highways	11%
Congestion level on non-highways	29%
Delay per hour driven in peak period	27 min
Delay per year with a 30 min commute	71 h

The weekly congestion pattern:

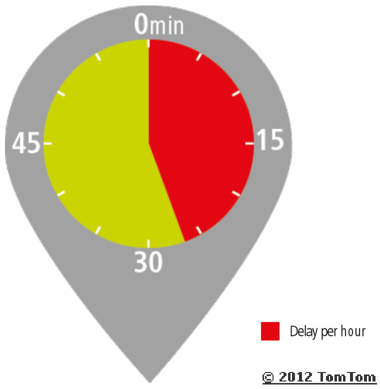
Best and worst peak periods of the week



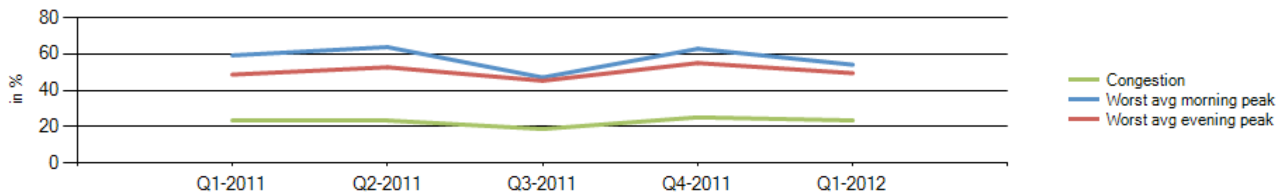
Most congested specific day	Wed 1 Feb 2012
Average free flow speed	55 km/h
Average speed during worst peak period	48 km/h
Total network length	1 440 km
Total network length highways	143 km
Total network length non-highways	1 297 km
Total vehicle kilometres	2 731 043 km

Congestion comparison

Delay per hour
driven in peak period



Comparison per quarter



Valencia



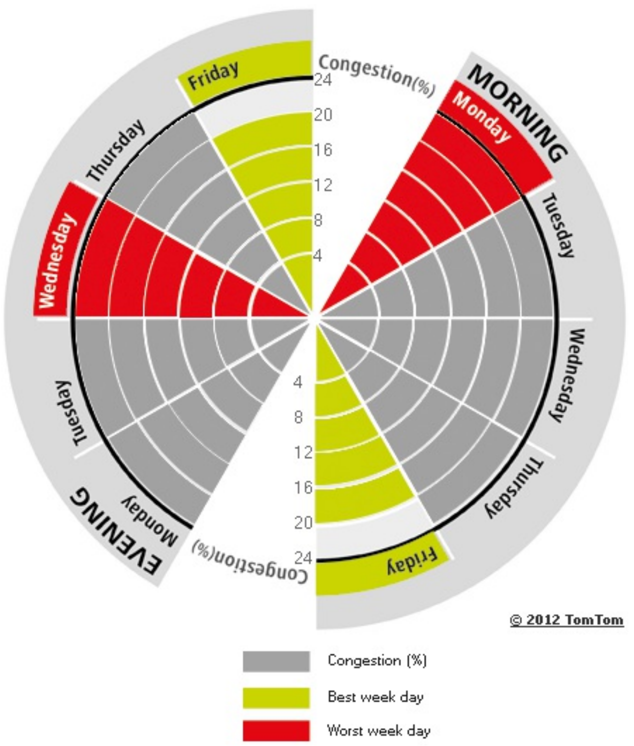
Congestion level

14%

Ranking

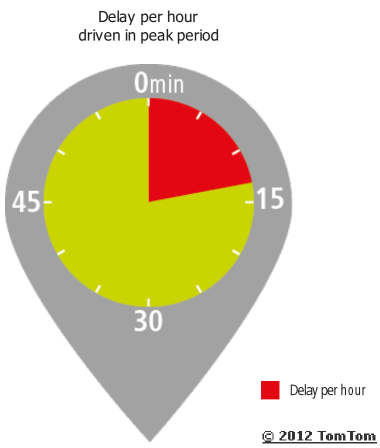
Ranking of city compared to continent	30/31
Previous ranking	28
Congestion level on highways	7%
Congestion level on non-highways	23%
Delay per hour driven in peak period	12 min
Delay per year with a 30 min commute	38 h

The weekly congestion pattern:
Best and worst peak periods of the week

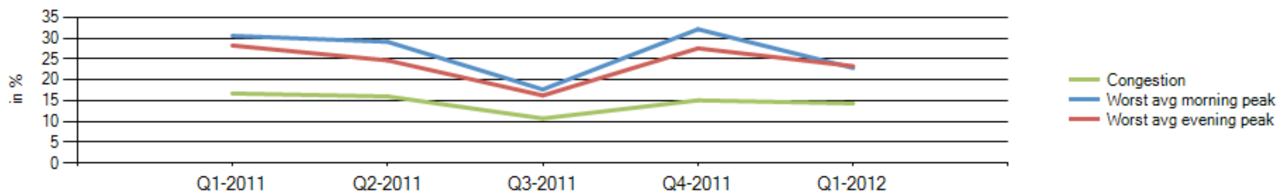


Most congested specific day	Mon 16 Jan 2012
Average free flow speed	61 km/h
Average speed during worst peak period	59 km/h
Total network length	830 km
Total network length highways	235 km
Total network length non-highways	595 km
Total vehicle kilometres	1 603 669 km

Congestion comparison



Comparison per quarter



Vienna



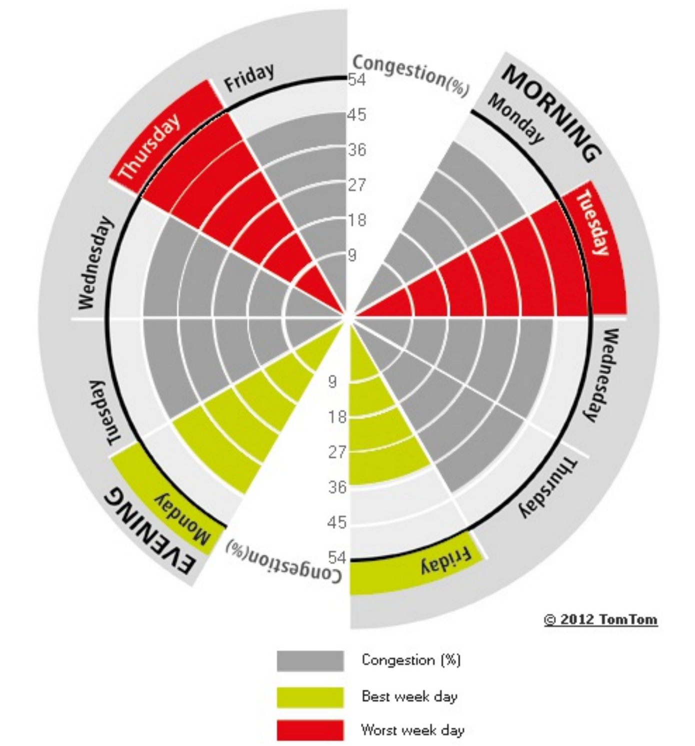
Congestion level

24%

Ranking	
Ranking of city compared to continent	14/31
Previous ranking	17
Congestion level on highways	16%
Congestion level on non-highways	31%
Delay per hour driven in peak period	25 min
Delay per year with a 30 min commute	67 h

The weekly congestion pattern:

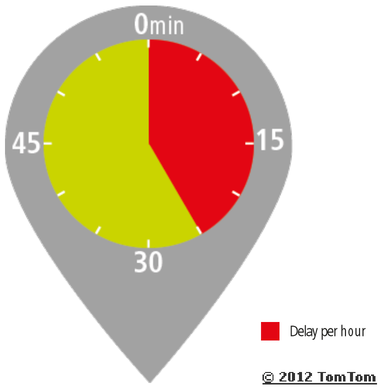
Best and worst peak periods of the week



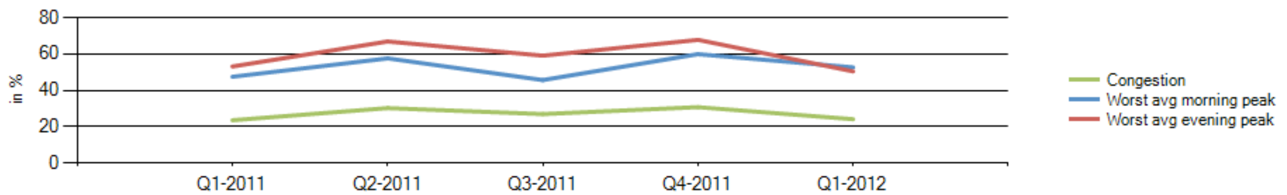
Most congested specific day	Tue 7 Feb 2012
Average free flow speed	52 km/h
Average speed during worst peak period	45 km/h
Total network length	1 312 km
Total network length highways	228 km
Total network length non-highways	1 084 km
Total vehicle kilometres	4 090 778 km

Congestion comparison

Delay per hour
driven in peak period



Comparison per quarter



Warsaw



Congestion level

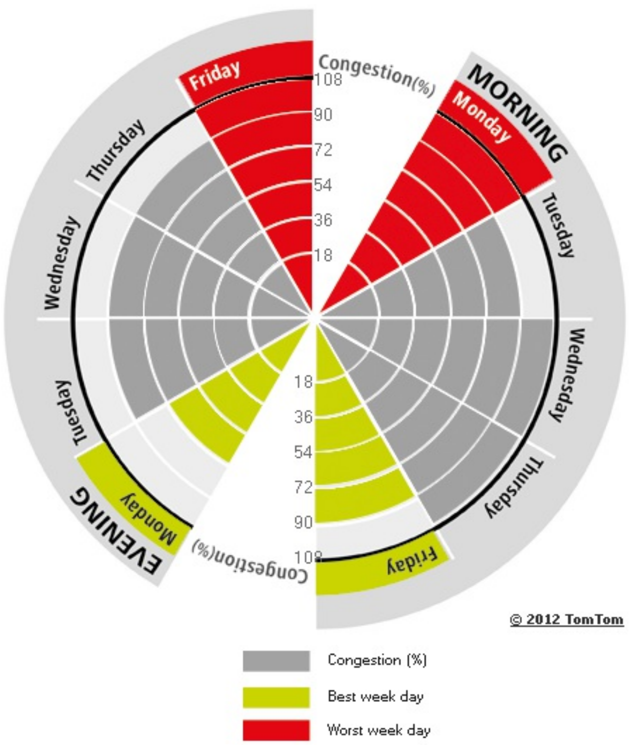
42%

Ranking

Ranking of city compared to continent	1/31
Previous ranking	1 ---
Congestion level on highways	39%
Congestion level on non-highways	45%
Delay per hour driven in peak period	52 min
Delay per year with a 30 min commute	106 h

The weekly congestion pattern:

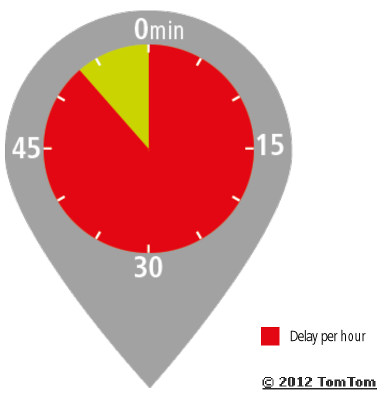
Best and worst peak periods of the week



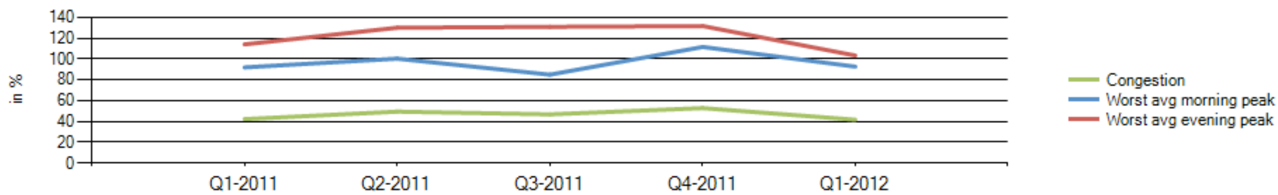
Most congested specific day	Wed 15 Feb 2012
Average free flow speed	60 km/h
Average speed during worst peak period	49 km/h
Total network length	987 km
Total network length highways	361 km
Total network length non-highways	626 km
Total vehicle kilometres	1 036 600 km

Congestion comparison

Delay per hour
driven in peak period



Comparison per quarter



Evaluated cities

Europe

Rank	City	Country	Congestion Level (%) 24/7	Morning peak	Evening peak	Weekdays	Weekend	Average speed (km/h)
1	Warsaw	Poland	42	89	86	50	18	54
2	Marseille	France	41	79	81	46	23	45
3	Rome	Italy	34	76	66	40	17	54
4	Brussels	Belgium	34	82	86	41	13	47
5	Paris	France	32	72	63	37	19	48
6	Dublin	Ireland	30	70	62	35	19	51
7	Bradford-Leeds	United Kingdom	28	63	60	31	15	53
8	London	United Kingdom	27	48	50	30	18	51
9	Stockholm	Sweden	27	65	62	31	13	49
10	Hamburg	Germany	27	49	42	30	15	51
11	Cologne	Germany	26	54	47	31	12	52
12	Milan	Italy	26	71	53	31	11	50
13	Berlin	Germany	26	42	44	29	14	50
14	Vienna	Austria	24	42	43	28	12	48
15	Oslo	Norway	24	66	70	28	8	50
16	Naples	Italy	24	34	43	27	15	45
17	Turin	Italy	23	50	42	27	13	51
18	Munich	Germany	23	50	36	26	14	54
19	Birmingham	United Kingdom	21	51	43	24	9	57
20	Luxembourg	Luxembourg	21	51	47	25	6	55
21	Barcelona	Spain	21	49	39	24	9	54
22	Lisbon	Portugal	20	41	49	24	8	56
23	Helsinki	Finland	20	43	43	23	11	57
24	Prague	Czech Republic	20	46	31	24	7	53
25	Ruhr region west	Germany	17	38	28	20	6	51
26	Copenhagen	Denmark	16	42	29	19	7	57
27	Madrid	Spain	16	41	33	19	6	67
28	Ruhr region east	Germany	15	31	28	18	5	51
29	Amsterdam	Netherlands	15	33	31	17	6	55
30	Valencia	Spain	14	21	21	16	9	59
31	Bern	Switzerland	8	19	31	11	0	48

Keywords

Keywords	Definition
Average Free Flow Speed	Measured average road speed during a free flow situation (usually at night).
Average observed speeds	Average observed speeds within specific time periods.
Cities	In this report urban areas in all countries with TomTom HD Traffic are evaluated. In these countries all urban areas that include a country capital and all urban areas that have over 800 000 inhabitants are included. A maximum of 20 urban areas per country is evaluated.
City	See Cities.
Congestion level	See TomTom Congestion Level.
Delay per hour driven in peak period	Delay in minutes per hour driven during morning and evening peak times compared to free flow situations. For example, 22 minutes delay per hour at peak times indicates that a one hour journey driven at free flow times will take an additional 22 minutes at peak times.
Delay per year for commuters	See Time delay per year for commuters.
FRC	Functional Road Class, an industry standard that defines different road categories. FRC0 = highways, FRC1 = international roads/slip roads, FRC2 = major roads, FRC3 = secondary roads, FRC4 = connecting roads.
Free flow	See Free flow situation.
Free flow condition	See Free flow situation.
Free flow situation	A journey made without any delay caused by traffic congestion. This most typically occurs during the night.
Free Flow Speed	See Average Free Flow Speed.
Highways	See FRC.
Most congested day	See most congested specific day.
Most congested specific day	The day with the highest Congestion Level.
Non-highways	See FRC
Peak hours	See Peak period.
Peak period	Based on real traffic measurements, the busiest one-hour-long period in the morning and in the evening period were determined for every evaluated city.
Road network	In this report all speed measurements on roads classified as FRC0 through FRC4 within the urban areas contribute to the statistics.
Time delay per year for commuters	Delay per year with a 30 minute commute. Based on 230 work days per year and two peak periods per day.
TomTom Congestion Level	Increase in overall travel times when compared to a free flow situation. For example, a Congestion Level of 12% corresponds to 12% longer travel times compared to a free flow situation.
Total network length	Total length of the evaluated network in kilometres.
Total network length highways	Total length of the evaluated network in kilometres for FRC0 and FRC1 only.
Total network length non-highways	Total length of the evaluated network in kilometres for FRC2, FRC3 and FRC4 only.
Total vehicle kilometres	Total distance covered by all TomTom user measurements, used for this specific report.
Travel time	TomTom's historic traffic database contains over six trillion anonymous speed measurements. Theses speed measurements are used to calculate the travel times on individual road segments and entire networks.
Urban area	Geographical area that takes population size and network layout into account. Speed measurements within the defined urban area contribute to the statistics.
Urban network	The road network in an urban area.

Explanation of tables and figures

Pages for continents

Section	Description
Congestion Level	Average Congestion Level across all cities evaluated on the continent.
Map of the continent	Image of the continent showing the 5 most congested cities.
Top 5 - increasing congestion	Top 5 cities with largest increase in the Congestion Level compared to the previous quarter.
Top 5 - decreasing congestion	Top 5 cities with largest decrease in the Congestion Level compared to the previous quarter.
Top 10 cities	Ranking of cities according to Congestion Levels.
• Rank	Rank according to Congestion Levels.
• Previous rank	Rank according to city Congestion Levels in the previous year.
• Congestion	Congestion Level.
• Morning peak	Average Congestion Level during morning peak periods on work days.
• Evening peak	Average Congestion Level during evening peak periods on work days.
• Highways	Average Congestion Level for highways only.
• Non-highways	Average Congestion Level for non-highways only.
Comparison per quarter	Change in Congestion Levels over the last year.
• Congestion	Average Congestion Level for all the cities evaluated.
• Worst average morning peak	Highest Congestion Level during the 5 morning peak periods (work days) in all cities evaluated.
• Worst average evening peak	Highest Congestion Level during the 5 evening peak periods (work days) in all cities evaluated.

Pages for cities

Section	Description
Congestion Level	Average Congestion Level across all roads in the city.
Ranking of city compared to continent	Rank of the city according to Congestion Level compared to other evaluated cities on the continent.
Congestion Level on highways	Congestion Level for highways only.
Congestion Level on non-highways	Congestion Level for non-highways only.
Delay per hour driven in peak period	Average delay in minutes for a one hour journey driven in the peak periods.
Delay per year with a 30 minute commute	The total accumulated delay over one year for a 30 minute commute driven in the peak periods on work days.
Speed during worst peak period	Average speed during most congested weekly rush hour.
The weekly congestion pattern	Average Congestion Levels for the 10 peak periods in a week (morning and evening peak hours on 5 working days).
Comparison per quarter	Change in Congestion Level over the past quarters.
Congestion	Average Congestion Level across the city.
Worst average morning peak	Highest Congestion Level during the 5 morning peak periods (work days).
Worst average evening peak	Highest Congestion Level during the 5 evening peak periods (work days).

